

Farmington City

**Storm Water Management Program**

Permit # UTR090006

**Submitted to:**  
State of Utah  
Department of Environmental Quality  
Division of Water Quality

**Submitted by:**  
Farmington City  
160 S Main  
Farmington, UT 84025

May, 2016

## **Purpose**

Farmington City's Storm Water Management Program (SWMP) is intended to give direction to the City in satisfying Federal and State water quality requirements as set forth under the National Pollutant Discharge Elimination System (NPDES) and Utah Pollutant Discharge Elimination System (UPDES) permits. The purpose of the SWMP is to establish a program which will effectively limit the discharge of pollutants from the Farmington City storm drainage system to the maximum extent practicable (MEP).

In an effort to prevent harmful pollutants from being carried by storm water runoff into local water bodies, this program outlines the implementation of controls in specific areas. The six minimum control measures addressed under the UPDES permit are:

1. Public Education and Outreach on Storm Water Impacts
2. Public Involvement/Participation
3. Illicit Discharge Detection and Elimination (IDDE)
4. Construction Site Storm Water Runoff Control
5. Long-Term Storm Water Management in Development and Redevelopment (Post-Construction Storm Water Management)
6. Pollution Prevention and Good Housekeeping for Municipal Operations

The SWMP includes the following information for each of the six minimum control measures:

- The Best Management Practices (BMPs) that the City will implement.
- The measurable goals for each of the BMPs.
- The persons/positions responsible for implementing or coordinating the BMPs.
- A rationale for how and why each of the BMPs and measurable goals for the program was selected.

## **Legal Authority**

### **Federal**

In 1972 Congress enacted the Clean Water Act (CWA). The primary purpose for this federal statute is to protect the nation's waters. The objective of the Act is the total elimination of the discharge of pollutants into the nation's waters. The NPDES is a provision of the CWA. This provision prohibits discharge of pollutants into waters of the United States unless a special permit is issued by the Environmental Protection Agency (EPA), a state, or another delegated agency. As authorized by the CWA, the NPDES permit program controls water pollution by regulating point sources that discharge into waters of the United States. Point sources are discreet conveyances such as pipes or man-made ditches.

Phase II of the NPDES permit program focuses on Small Municipal Separate Storm Sewer Systems (MS4s). The regulated entities must obtain coverage under an NPDES



storm water permit and implement a SWMP. The main objective of the program is to control point source pollution in urbanized areas to the maximum extent practicable.

### **State**

The State Department of Environmental Quality (DEQ) administers the NPDES permit program in the State of Utah. The State has a General Permit. The DEQ issues UPDES permits under the State's General Permit.

### **County**

Each of the 15 cities in Davis County files for separate permits. Although Farmington City has been issued a separate permit, the City works jointly with the Davis County Storm Water Coalition and the Davis County Health Department to facilitate a program addressing the first three minimum control measures:

1. Public Education and Outreach on Storm Water Impacts
2. Public Involvement/Participation
3. Illicit Connection and Illicit Discharge Detection and Elimination

Components of the Coalition's program include public education and training among joint partners in the County. The Davis County Health Department cooperates with illicit discharge detection and elimination.

### **City**

Farmington is located in Davis County. The population of the community is estimated to be 21,000. The majority of the land use in the City is residential. There are some agricultural areas, and commercial development is increasing.

Farmington City will implement management practices that will effectively limit the discharge of pollutants from the storm drainage system, protect water quality, and satisfy the appropriate water quality requirements of the *Utah Water Quality Act*. The City has established legal authority to control discharges to and from the storm drainage system through a combination of statute, ordinance, permit, contract or order.

Management and oversight of the Farmington City Storm Water Management Program is funded by the Farmington City Storm Water Utility. The Farmington City SWMP is coordinated by the Storm Water Official.

## **SWMP Review and Modification**

Farmington City will participate in an annual review of the SWMP. In conjunction with that review, an annual report will be prepared and submitted to the State. Any changes or modifications will be described and submitted. This review will include the following:

- A status review of the program implementation and compliance with the schedule of compliance contained in the SWMP
- A review of any revision or change of BMPs in the reporting year and assessment of the change or revision for effectiveness
- An overall assessment of the goals and direction of the SWMP and effectiveness of BMPs

An annual report will be submitted using the report form provided on the Division of Water Quality's (Division) website.

The SWMP may be modified in compliance with the following:

- Changes adding (but not subtracting) components, controls, or requirements to the SWMP may be made at any time upon written notification to the Division.
- Changes replacing an ineffective or unfeasible BMP specifically identified in the SWMP with an alternate BMP may be adopted at any time, provide the analysis is clearly outlined and subsequently approved by the Division. An analysis shall include:
  1. An explanation of why the BMP is ineffective or infeasible.
  2. Expectations or report on the effectiveness of the replacement BMP.
  3. An analysis of why the replacement BMP is expected to achieve the goals of the BMP to be replaced, or has achieved those goals.
- Change requests or notification must be made in writing and signed as required.

## **Chapter One**

# **Public Education and Outreach**

The purpose of this chapter is to define the outreach and education efforts that will be used to inform the public about storm water pollution issues in Farmington City. The City will continue to participate with the Davis County Storm Water Coalition in its efforts to provide public education and outreach to the citizens in Davis County.

## **Requirements**

1. The City will participate in a public education and outreach program to promote behavior change by the public to reduce water quality impacts associated with pollutants in storm water runoff and illicit discharges. The effort will include a multimedia approach and shall be targeted and presented to specific audiences for increased effectiveness. Education and outreach efforts will include the following four audiences: (1) residents, (2) businesses, institutions, and commercial facilities, (3) developers and contractors (construction), and (4) MS4-owned or operated facilities. The minimum performance measures which should be based on land use and target audiences found within the community include:
  - a. Targeting specific pollutants and pollutant sources determined by the Coalition or City to be impacting, or have the potential to impact, the beneficial uses of receiving water. This includes providing information and outreach activities which describe the potential impacts from storm water discharges; methods for avoiding, minimizing, reducing and/or eliminating the adverse impacts of storm water discharges and the actions individuals can take to improve water quality, including encouraging participation in local environmental stewardship activities, based on the land uses and target audiences found within the City.
  - b. Provide and document information given to the general public of the City's prohibitions against and the water quality impacts associated with illegal discharges and improper disposal of waste.
  - c. Provide and document information given to institutions, industrial, and commercial facilities on an annual basis of the Permittee's prohibition against and the water quality impacts associated with illicit discharges and improper disposal of waste.
  - d. Providing information for engineers, construction contractors, developers, development review staff, and land use planners about the development of storm water pollution prevention plans (SWPPPs) and BMPs for reducing adverse impacts from storm water runoff from development sites.
  - e. Provide and document information and training given to employees of Permittee owned or operated facilities concerning the Permittee's prohibition against and the water quality impacts associated with illicit discharges and improper disposal of waste.
  - f. Providing and documenting training given to MS4 engineers, development and plan review staff, land use planners, and other parties as applicable to

learn about Low Impact Development (LID) practices, green infrastructure practices, and to communicate the specific requirements for post-construction control and the associated Best Management Practices (BMPs) chosen within the SWMP.

Specific targeted pollutants and audiences were discussed in meetings with the Coalition members. Notes from those meetings are on record at Farmington City Hall.

Appendix A is a table showing the proposed activities of the Davis County Storm Water Coalition in which Farmington City will participate:

## Measurable Goals

The table below represents measurable goals that are to be implemented and assessed during the permit term. The purpose of measurable goals is to gauge permit compliance and program effectiveness.

Measurable Goals- Public Education & Outreach			
Target Date	BMP	Responsible Party	Rationale
1st Year July, 2017	<ul style="list-style-type: none"> <li>Provide funding and review of 4th grade outreach program and provide education for all 4th grade classes in Davis County in cooperation with the Davis County Storm Water Coalition</li> <li>Provide funding and participate in annual Water Fair for 4th graders in cooperation with the Davis County Storm Water Coalition</li> <li>Publish one article in the Farmington City Newsletter addressing local storm water issues</li> <li>Provide funding through the Davis County Storm Water Coalition for the Salt Lake County television ad campaign</li> <li>Provide funding and support for contractor, municipal employee, developer, institutions, industrial and commercial facilities etc. training annually through the Davis County Storm Water Coalition</li> </ul>	<b>DCSWC= Davis County Storm Water Coalition</b>	
		DCSWC	This fits in with the curriculum and reaches future adults in the community
		DCSWC	This fits in with the curriculum and reaches future adults in the community
		Ken Klinker	There is a need to educate residents. The newsletter reaches everyone with the water bill.
		DCSWC	This is a joint program with other counties which has been funded for several years to reach the maximum number of residents.
2nd Year July, 2018	<ul style="list-style-type: none"> <li>Provide funding and support for contractor, municipal employee, developer etc. training annually through the Davis County Storm Water Coalition</li> <li>Provide funding and review of 4th grade outreach program and provide education for all 4th grade classes in Davis County in cooperation with the Davis County Storm Water Coalition</li> <li>Provide funding and participate in annual Water Fair for 4th graders in cooperation with the Davis County Storm Water Coalition</li> <li>Publish one article in the Farmington City Newsletter addressing local storm water issues</li> <li>Provide funding through the Davis County Storm Water Coalition for the Salt Lake County television ad campaign</li> <li>Provide funding and support for contractor, municipal employee, developer etc. training annually through the Davis County Storm Water Coalition</li> </ul>		
		DCSWC	There is a need to fund training for these groups. The coalition can facilitate the training for all participating communities.
		DCSWC	This fits in with the curriculum and reaches future adults in the community
		Ken Klinker	There is a need to educate residents. The newsletter reaches everyone with the water bill.
		DCSWC	This is a joint program with other counties which has been funded for several years to reach the maximum number of residents.
		DCSWC	There is a need to fund these groups. The coalition can facilitate the training for all participating communities.





## **Chapter Two**

# **Public Involvement and Participation**

The purpose of this chapter is to outline a plan to include public involvement and participation in the process for developing this Storm Water Management Program.

## **Requirements**

1. The City must implement a program that complies with applicable state and local public notice requirements. The SWMP shall include ongoing opportunities for public involvement and participation such as advisory panels, public hearings, watershed committees, stewardship programs, environmental activities, other volunteer opportunities, or other similar activities. The City should involve all potentially affected stakeholder groups, which include but are not limited to, commercial and industrial businesses, trade associations, environmental groups, homeowners associations, and education organizations. The minimum performance measures will be:
  - a. The City shall adopt a program or policy directive to create opportunities for the public to provide input during the decision making processes involving the development, implementation and update of the SWMP, including development and adoption of all required ordinances and regulatory mechanisms.
  - b. The City will make the latest updated version of the SWMP available to the public for review and input. A current version of the SWMP will remain available for public review and input for the life of the permit. The City will post the latest version of the SWMP on its website to allow the public to review and provide input.
  - c. Notice of all SWMP-related public hearings should be published in a community publication or newspaper of general circulation to provide opportunities for public involvement.

## Measurable Goals

Measurable Goals- Public Involvement & Participation			
Target Date	BMP	Responsible Party	Rationale
1st Year July, 2017	<ul style="list-style-type: none"> <li>o Hold a public hearing to provide input and adopt the SWMP</li> <li>o Participate in Storm Water Coalition meetings which include input from private sector representatives</li> <li>o Post SWMP on Farmington City Website and request public input into program</li> <li>o Respond to all comments received concerning SWMP</li> <li>o Revise SWMP on an annual basis if needed</li> </ul>	Farmington City Ken Klinker  Ken Klinker  Ken Klinker  Ken Klinker	Want to receive public review and input Helps us to work together to address issues and get input from the private sector Permit requirement and desire to have public input  Permit requirement and desire to address public concerns Permit requirement
2nd Year July, 2018	<ul style="list-style-type: none"> <li>o Hold a public meeting to solicit input on potential changes to the SWMP</li> <li>o Participate in Storm Water Coalition meetings which include input from private sector representatives</li> <li>o Post the SWMP on the Farmington City Website and request public input into program</li> <li>o Respond to all comments received concerning SWMP</li> <li>o Revise SWMP on an annual basis if needed</li> </ul>	Farmington City  Ken Klinker  Ken Klinker  Ken Klinker  Ken Klinker	Want to receive public review and input  Helps us to work together to address issues and get input from the private sector Permit requirement and desire to have public input  Permit requirement and desire to address public concerns Permit requirement
3rd Year July, 2019	<ul style="list-style-type: none"> <li>o Hold a public meeting to solicit input on potential changes to the SWMP</li> <li>o Participate in Storm Water Coalition meetings which include input from private sector representatives</li> <li>o Post the SWMP on the Farmington City Website and request public input into program</li> <li>o Respond to all comments received concerning SWMP</li> <li>o Revise SWMP on an annual basis if needed</li> </ul>	Farmington City  Ken Klinker  Ken Klinker  Ken Klinker  Ken Klinker	Want to receive public review and input  Helps us to work together to address issues and get input from the private sector Permit requirement and desire to have public input  Permit requirement and desire to address public concerns Permit requirement
4th Year July, 2020	<ul style="list-style-type: none"> <li>o Hold a public meeting to solicit input on potential changes to the SWMP</li> <li>o Participate in Storm Water Coalition meetings which include input from private sector representatives</li> <li>o Post the SWMP on the Farmington City Website and request public input into program</li> <li>o Respond to all comments received concerning SWMP</li> <li>o Revise SWMP on an annual basis if needed</li> </ul>	Farmington City  Ken Klinker  Ken Klinker  Ken Klinker  Ken Klinker	Want to receive public review and input  Helps us to work together to address issues and get input from the private sector Permit requirement and desire to have public input  Permit requirement and desire to address public concerns Permit requirement

<p>5th Year July, 2021</p>	<ul style="list-style-type: none"> <li>o Hold a public meeting to solicit input on potential changes to the SWMP</li> <li>o Participate in Storm Water Coalition meetings which include input from private sector representatives</li> <li>o Post the SWMP on the Farmington City Website and request public input into program</li> <li>o Respond to all comments received concerning SWMP</li> <li>o Revise SWMP on an annual basis if needed</li> </ul>	<p>Farmington City</p> <p>Ken Klinker</p> <p>Ken Klinker</p> <p>Ken Klinker</p> <p>Ken Klinker</p>	<p>Want to receive public review and input</p> <p>Helps us to work together to address issues and get input from the private sector</p> <p>Permit requirement and desire to have public input</p> <p>Permit requirement and desire to address public concerns</p> <p>Permit requirement</p>
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## **Chapter Three**

### **Illicit Discharge Detection and Elimination**

The purpose of this chapter is to outline a program designed to systematically find and eliminate sourced of non-storm water discharges from the Farmington storm water system and to implement defined procedures to prevent illicit connections and discharges.

Farmington City will work with the Davis County Public Health Department, which maintains an illicit discharge reporting hotline, to evaluate illicit discharges and assure that they are stopped and properly cleaned up.

### **Requirements**

Farmington City will:

1. Maintain a current storm sewer system map of the City, showing the location of all municipal storm sewer outfalls and the names and location of all state waters that receive discharges from those outfalls, storm drain pipes, and other storm water conveyance structures within the system.
2. Effectively prohibit, through ordinances or other regulatory mechanisms, illicit discharges to the MS4, including spills, illicit connections, illegal dumping and sanitary sewer overflows (“SSOs”) into the storm sewer system, require removal of such discharges consistent with Part 4.2.3.6. of the permit, and implement appropriate enforcement procedures and actions.
3. The IDDE program must have adequate legal authority to detect, investigate, eliminate and enforce against non-storm water discharges, including illegal dumping, into the MS4. Adequate legal authority consists of an effective ordinance, by-law, or other regulatory mechanism. The documented IDDE program that is included in the City’s SWMP must include a reference or citation of the authority the City will use to implement all aspects of the IDDE program.
4. Implement a written plan to detect and address non-storm water discharges to the MS4, including spills, illicit connections, sanitary sewer overflows and illegal dumping.

### **Ordinance for Illicit Discharges**

Farmington City Ordinance 16-4-140 addresses illicit discharges to the storm water system. The Storm Water Ordinance, Title 16, provides for penalties for violating the ordinance.



Measurable Goals- IDDE			
Target Date	BMP	Responsible Party	Rationale
1st Year July, 2017	<ul style="list-style-type: none"> <li>Develop the IDDE Program for the City.</li> <li>Adopt the IDDE Program after receiving public input at a public hearing.</li> <li>Create a list of priority areas likely to have illicit discharges</li> <li>Inspect 100% of priority areas identified and 20% of other areas.</li> <li>Produce a Field Inspection Form to document findings of inspections.</li> <li>Develop SOPs for tracing the source of an illicit discharge.</li> <li>Develop SOPs for characterizing the nature of, and the potential public or environmental threat posed by any detected illicit discharge.</li> <li>Develop SOPs for ceasing illicit discharges.</li> <li>Develop a written spill/dumping response procedure and flow chart.</li> <li>Provide employee training about the IDDE program.</li> </ul>	<p>Ken Klinker Farmington City</p> <p>Ken Klinker Nash Jeppsen Ken Klinker</p> <p>Ken Klinker Ken Klinker</p> <p>Ken Klinker Farmington City</p> <p>Ken Klinker</p>	<p>Permit requirement Will provide authority to carry out the program, and allow citizens to provide input Permit Requirement- will be part of IDDE Permit requirement Will need this to document inspections</p> <p>Will be part of IDDE program Will be part of IDDE program</p> <p>Will be part of IDDE Public works needs to have this as part of their SOP Permit requirement and desire to educate employees</p>
	<ul style="list-style-type: none"> <li>Implement the IDDE program for the City.</li> <li>Implement the SOPs for tracing sources of illicit discharges.</li> <li>Implement SOPs for characterizing the nature of, and the potential public or environmental threat posed by any detected illicit discharge.</li> <li>Inspect 100% of priority areas identified and 20% of other areas and document all inspections.</li> <li>Update storm water system map to include any new discharge points.</li> <li>Input results of inspections in GIS data base.</li> <li>Monitor suspected outfalls.</li> <li>Identify and fix sources of illicit discharge.</li> <li>Provide employee training about the IDDE program.</li> </ul>	<p>Ken Klinker Ken Klinker Ken Klinker</p> <p>Nash Jeppsen</p> <p>Nash Jeppsen/ Dennis Allen (GIS) Nash Jeppsen</p> <p>Nash Jeppsen Nash Jeppsen/Ken Klinker Ken Klinker/Nash Jeppsen</p>	<p>Permit requirement Permit requirement Permit requirement</p> <p>Permit requirement</p> <p>Permit requirement/ need updated info to be effective Need efficient way to track inspections and problems Permit requirement/ need to address issues Permit requirement/ need to address issues Permit requirement and desire to educate employees</p>
2nd Year July, 2018			

3rd Year July, 2019	<ul style="list-style-type: none"> <li>Inspect 100% of priority areas identified and 20% of other areas and document all inspections</li> <li>Update storm water system map to include any new discharge points.</li> <li>Input results of inspections in GIS data base.</li> <li>Monitor suspected outfalls.</li> <li>Identify and fix sources of illicit discharge.</li> <li>Review ordinance and revise to meet needs identified in IDDE program that are not currently addressed.</li> <li>Provide employee training about the IDDE program.</li> </ul>	<p>Nash Jeppsen</p> <p>Nash Jeppsen /Dennis Allen (GIS)</p> <p>Dennis Allen (GIS)</p> <p>Nash Jeppsen</p> <p>Ken Klinker/ Nash Jeppsen</p> <p>Ken Klinker /Farmington City</p> <p>Ken Klinker/ Nash Jeppsen</p>	<p>Permit requirement</p> <p>Permit requirement/ need updated info to be effective</p> <p>Need efficient way to track inspections and problems</p> <p>Permit requirement/ need to address issues</p> <p>Permit requirement/ need to address issues</p> <p>Want to make sure ordinance address needs of the IDDE program</p> <p>Permit requirement and desire to educate employees</p>
4th Year July, 2020	<ul style="list-style-type: none"> <li>Inspect 100% of priority areas identified and 20% of other areas and document all inspections</li> <li>Update storm water system map to include any new discharge points.</li> <li>Input results of inspections in GIS data base.</li> <li>Monitor suspected outfalls.</li> <li>Identify and fix sources of illicit discharge.</li> <li>Review ordinance and revise to meet needs identified in IDDE program that are not currently addressed.</li> <li>Provide employee training about the IDDE program.</li> </ul>	<p>Nash Jeppsen</p> <p>Nash Jeppsen /Dennis Allen (GIS)</p> <p>Dennis Allen (GIS)</p> <p>Nash Jeppsen</p> <p>Ken Klinker/ Nash Jeppsen</p> <p>Ken Klinker /Farmington City</p> <p>Ken Klinker/ Nash Jeppsen</p>	<p>Permit requirement</p> <p>Permit requirement/ need updated info to be effective</p> <p>Need efficient way to track inspections and problems</p> <p>Permit requirement/ need to address issues</p> <p>Permit requirement/ need to address issues</p> <p>Want to make sure ordinance addresses needs of the IDDE program</p> <p>Permit requirement and desire to educate employees</p>
5th Year July, 2021	<ul style="list-style-type: none"> <li>Inspect 100% of priority areas identified and 20% of other areas and document all inspections</li> <li>Update storm water system map to include any new discharge points.</li> <li>Input results of inspections in GIS data base.</li> <li>Monitor suspected outfalls.</li> <li>Identify and fix sources of illicit discharge.</li> <li>Review ordinance and revise to meet needs identified in IDDE program that are not currently addressed.</li> </ul>	<p>Nash Jeppsen</p> <p>Nash Jeppsen /Dennis Allen (GIS)</p> <p>Dennis Allen (GIS)</p> <p>Nash Jeppsen</p> <p>Ken Klinker/ Nash Jeppsen</p> <p>Ken Klinker /Farmington City</p>	<p>Permit requirement</p> <p>Permit requirement/ need updated info to be effective</p> <p>Need efficient way to track inspections and problems</p> <p>Permit requirement/ need to address issues</p> <p>Permit requirement/ need to address issues</p> <p>Want to make sure ordinance addresses needs of the IDDE program</p>

	<ul style="list-style-type: none"> <li>○ Provide employee training about the IDDE program.</li> </ul>	Ken Klinker/ Nash Jeppsen	Permit requirement and desire to educate employees
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The City will notify DEQ whenever it discovers or suspects that a discharger may need a separate UPDES Permit (e.g., Industrial Storm Water Permit, Dewatering Permit),

## **Chapter Four**

# **Construction Site Storm Water Runoff Control**

The purpose of this chapter is to outline a program designed to reduce pollutants in storm water from construction sites. This will be achieved through a combination of structural and non- structural BMPs. This section addresses water quality concerns for construction sites with a land disturbance greater than equal to one acre, including projects that are less than one acre that are part of a larger common plan of development or sale.

## **Requirements**

Farmington City will:

Enforce the storm water ordinance (Title 16 of the Farmington City Ordinances) which requires erosion and sediment controls for construction projects disturbing greater than or equal to one acre and to construction project of less than one acre that are part of a common plan of development or sale.

1. Require construction operators or developers to prepare a Storm Water Pollution Prevention Plan (SWPPP) and apply BMPs as necessary to protect water quality, reduce the discharge of pollutants, and control waste such as, but not limited to, discarded building materials, concrete truck washout, chemicals litter and sanitary waste at the construction site that may cause adverse impacts to water quality.
2. Ensure construction operators obtain and maintain coverage under the current UPDES Storm Water General Permits for Construction Activities for the duration of the project.
3. Develop an enforcement strategy and implement the enforcement provisions of the ordinance, including:
  - a. Documented procedures that include specific processes and sanctions to minimize the occurrence of, and obtain compliance from violators which shall include appropriate, escalating enforcement procedures and actions.
  - b. Documentation and tracking of all enforcement actions.
4. Require access by qualified personnel to inspect construction storm water BMPs on private properties that discharge to the City.
5. Adopt and implement procedures for site plan review which incorporate consideration of potential water quality impacts. Prior to construction the City will:
  - a. Review construction Storm Water Pollution Prevention Plans (SWPPPs) and keep records for, at a minimum, all construction sites that disturb one acre or more, or are less than one acre and are part of a common plan of development. The City will keep copies of these records for five years or until construction is completed, whichever is longer.
  - b. The City will provide training for all staff involved in permitting, planning, and review.
6. The City will adopt and implement procedures for site inspection and enforcement of construction storm water pollution control measures. The construction site storm water runoff control program will provide:

- a. Training for staff on the fundamentals of erosion prevention and sediment control and in how to review SWPPPs;
- b. Identification of priority construction activities, including at a minimum those construction activities discharging directly into or immediately upstream of waters that the state recognizes as impaired or high quality;
- c. Review of all SWPPPs prior to construction;
- d. Pre-construction meetings with at a minimum, construction site operators of priority construction activities;
- e. Inspections by the City of priority construction sites at least bi-weekly.
- f. Inspections of all new construction sites that disturb one acre or more, or are part of a common plan of development or sale at least monthly by qualified personnel.
- g. An adopted procedure for keeping records of inspections and enforcement actions by staff, including inspection reports, verbal warnings, stop work orders, warning letters, noticed of violations, and other enforcement records.



<b>Measurable Goals- Construction Site Storm Water Runoff Control</b>					
<b>Target Date</b>	<b>BMP</b>	<b>Responsible Party</b>	<b>Rationale</b>		
1st Year July, 2017	o Review Title 16 and identify areas where it is not equivalent to the technical requirements set forth in the UPDES Storm Water General Permit for Construction Activities, UTR00000 and MS4 General UPDES Permit No. UTR090006.	Ken Klinker/ Attorney	The ordinance we are to enforce needs to allow us to do the things required by the permit.		
	o Develop a written enforcement strategy.	Ken Klinker	To allow a clear understanding of what is expected		
	o Review all SWPPPs prior to construction.	Ken Klinker	Permit requirement		
	o Inspect all construction sites requiring a permit at least monthly and document inspections.	Nash Jeppsen	Permit requirement		
	o Inspect priority construction sites at least biweekly and document inspections	Nash Jeppsen	Permit requirement		
	o Take all necessary follow-up action and track and document them.	Nash Jeppsen	Permit requirement		
	o Take all necessary follow-up action and track and document them.	Nash Jeppsen	Permit requirement		
	o Maintain records of all projects requiring a permit.	Nash Jeppsen/ Ken Klinker	Permit requirement		
2nd Year July, 2018	o Track all training of enforcement staff.	Ken Klinker	Permit requirement		
	o Implement the enforcement strategy	Ken Klinker/ Nash Jeppsen	Permit requirement		
	o Review all SWPPPs prior to construction.	Ken Klinker	Permit requirement		
	o Identify priority construction sites	Nash Jeppsen	Permit requirement		
	o Inspect all construction sites requiring a permit at least monthly and document inspections.	Nash Jeppsen	Permit requirement		
	o Inspect priority construction sites at least biweekly and document inspections.	Nash Jeppsen	Permit requirement		
	o Take all necessary follow-up action and track and document them.	Nash Jeppsen	Permit requirement		
	o Maintain records of all projects requiring a permit.	Ken Klinker/ Nash Jeppsen	Permit requirement		
	o Track all training of enforcement staff.	Ken Klinker	Permit requirement		
	o Revise Title 16 to address any issues identified during the year.	Ken Klinker/ Farmington City	Need to update ordinance to address any issues of concern identified while enforcing policies		

<p>3rd Year July, 2019</p>	<ul style="list-style-type: none"> <li>o Identify priority construction sites</li> <li>o Inspect all construction sites requiring a permit at least monthly and document inspections.</li> <li>o Inspect priority construction sites at least biweekly and document inspections.</li> <li>o Take all necessary follow-up action and track and document them.</li> <li>o Maintain records of all projects requiring a permit.</li> <li>o Attend at least one training opportunity which addresses storm water pollution prevention compliance.</li> <li>o Require SWPPPs for all developments meeting minimum threshold requirements</li> <li>o Review all SWPPPs prior to construction.</li> <li>o Track all training of enforcement staff.</li> <li>o Revise Title 16 to address any issues identified during the year.</li> </ul>	<p>Nash Jepps Nash Jepps  Nash Jepps  Nash Jepps Ken Klinker/ Nash Jepps  Ken Klinker  Ken Klinker Ken Klinker Ken Klinker/ Farmington City</p>	<p>Permit requirement Permit requirement  Permit requirement  Permit requirement Permit requirement Need to remain up-to-date on storm water issues Permit requirement  Permit requirement Permit requirement Need to update ordinance to address any issues of concern identified while enforcing policies</p>
<p>4th Year July, 2020</p>	<ul style="list-style-type: none"> <li>o Identify priority construction sites</li> <li>o Inspect all construction sites requiring a permit at least monthly and document inspections.</li> <li>o Inspect priority construction sites at least biweekly and document inspections.</li> <li>o Take all necessary follow-up action and track and document them.</li> <li>o Maintain records of all projects requiring a permit.</li> <li>o Attend at least one training opportunity which addresses storm water pollution prevention compliance.</li> <li>o Require SWPPPs for all developments meeting minimum threshold requirements</li> <li>o Review all SWPPPs prior to construction.</li> <li>o Track all training of enforcement staff.</li> <li>o Revise Title 16 to address any issues identified during the year.</li> </ul>	<p>Nash Jepps Nash Jepps  Nash Jepps  Nash Jepps Ken Klinker/ Nash Jepps  Ken Klinker  Ken Klinker Ken Klinker Ken Klinker/ Farmington City</p>	<p>Permit requirement Permit requirement  Permit requirement  Permit requirement Permit requirement Need to remain up-to-date on storm water issues Permit requirement  Permit requirement Permit requirement Need to update ordinance to address any issues of concern identified while enforcing policies</p>

<p>5th Year July, 2021</p>	<ul style="list-style-type: none"> <li>o Identify priority construction sites</li> <li>o Inspect all construction sites requiring a permit at least monthly and document inspections.</li> <li>o Inspect priority construction sites at least biweekly and document inspections.</li> <li>o Take all necessary follow-up action and track and document them.</li> <li>o Maintain records of all projects requiring a permit.</li> <li>o Attend at least one training opportunity which addresses storm water pollution prevention compliance.</li> <li>o Require SWPPPs for all developments meeting minimum threshold requirements</li> <li>o Review all SWPPPs prior to construction.</li> <li>o Track all training of enforcement staff.</li> <li>o Revise Title 16 to address any issues identified during the year.</li> </ul>	<p>Nash Jeppsen Nash Jeppsen  Nash Jeppsen  Nash Jeppsen Ken Klinker/ Nash Jeppsen  Ken Klinker  Ken Klinker Ken Klinker Ken Klinker/ Farmington City</p>	<p>Permit requirement Permit requirement  Permit requirement  Permit requirement Permit requirement Need to remain up-to-date on storm water issues Permit requirement  Permit requirement Permit requirement Need to update ordinance to address any issues of concern identified while enforcing policies</p>
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## Chapter Five

# Long-Term Storm Water Management in New Development and Redevelopment

The City will develop, implement and enforce a program to address post-construction storm water runoff to the City from new development and redevelopment projects according to the minimum performance measures listed below. The objective is for the hydrology of a new development to mirror the pre-development hydrology of the previously undeveloped site or to improve the hydrology of a redeveloped site and reduce the discharge of storm water. The program applies to private and public development sites, including roads.

### Requirements

The minimum performance measures are:

1. Develop and adopt an ordinance or other regulatory mechanism that requires post-construction storm water controls at new development and redevelopment sites. The ordinance or other regulatory mechanism shall apply, at a minimum, to new development and redevelopment sites that discharge to the City and that disturb one acre or more or are less than one acre and are part of a common plan of development or sale. The ordinance shall require BMP selection, design, installation, operation and maintenance standards necessary to protect water quality and reduce the discharge of pollutants to the City.
2. Develop an enforcement strategy and implement the enforcement provisions of the ordinance. Procedures for enforcement of BMPs include:
  - a. Procedures that include specific processes and sanctions to minimize the occurrence of, and obtain compliance from, chronic and recalcitrant violators which shall include appropriate escalating enforcement procedures and actions.
  - b. Documentation on how the requirements of the ordinance will protect water quality and reduce the discharge of pollutants to the MEP. Documentation shall include:
    - i. How storm water BMPs were selected;
    - ii. The pollutant removal expected from the selected BMPs; and
    - iii. The technical basis which supports the performance claims for the selected BMPs.
3. Develop a new development/redevelopment program that has requirements or standards to ensure that any storm water controls or management practices for new development or redevelopment will prevent or minimize impacts to water quality. BMPs must be selected that address pollutants known to be discharged or anticipated to be discharged from the site.
4. The City's new development/redevelopment program shall include nonstructural BMPs such as requirements and standards to minimize development in areas susceptible to erosion and sediment loss; to minimize the disturbance of native soils and vegetation; to preserve areas in the municipality that provide important water quality benefits; to implement measures for flood control; and to protect the integrity of natural resources and sensitive areas.

5. Develop a new development/redevelopment program that includes a process which requires the evaluation of a Low Impact Development (LID) approach which encourages the implementation of structural BMPs that infiltrate, evapotranspire or harvest and use storm water from the site to protect water quality. Structural controls may include green infrastructure practices such as rainwater harvesting, rain gardens, permeable pavements, and vegetated swales. If an LID approach cannot be utilized, the City must document an explanation of the reasons preventing this approach and the rationale for the chosen alternative controls on a case by case basis for each project.
6. Develop a plan to retrofit existing developed sites that are adversely impacting water quality. The retrofit plan will be developed to emphasize controls that infiltrate evapotranspire or harvest and use storm water discharges. The plan will include the ranking of control measures to determine those best suited for retrofitting as well as those that could later be considered for retrofitting. The following will be included when developing the criteria for the retrofit plan:
  - a. Proximity to water body
  - b. Status of waterbody to protect unimpaired waterbodies
  - c. Hydrologic condition of the receiving waterbody
  - d. Proximity to sensitive ecosystem or protected area
  - e. Any upcoming sites that could be further enhanced by retrofitting storm water controls
7. Define a specific hydrologic method or methods for calculating runoff volumes and flow rates to ensure consistent sizing of structural BMPs and to facilitate plan review. Other unique or complex methodologies may be allowed. After October 1, 2016, new development or redevelopment projects that disturb greater than or equal to one acre, including projects less than one acre that are part of a larger common plan of development or sale must manage rainfall on-site, and prevent the off-site discharge of the precipitation from all rainfall events less than or equal to the 90th percentile rainfall event. This objective must be accomplished by the use of practices that are designed, constructed, and maintained to infiltrate, evapotranspire and/or harvest and reuse rainwater. The 90th percentile rainfall event is the event whose precipitation total is greater than or equal to 90 percent of all storm events over a given period of record. If meeting this retention standard is technically infeasible, a rationale shall be provided on a case by case basis for the use of alternative design criteria. The project must document and quantify that infiltration, evapotranspiration and rainwater harvesting have been used to the maximum extent technically feasible and that full employment of these controls are infeasible due to site constraints.
8. Adopt and implement procedures for site plan review which incorporate consideration of water quality impacts. The procedures shall apply through the life of the project from conceptual design to project closeout. Prior to construction the City will:
  - a. Review post-construction plans for, at a minimum, all new development and redevelopment sites that disturb greater than or equal to one acre, including projects less than one acre that are part of a larger common plan of development or sale, to ensure that the plans include long-term storm water management measures that meet the requirements of this minimum control measure



- b. Provide developers and contractors with preferred design specifications to more effectively treat storm water for different development types such as industrial parks, commercial strip malls, retail gasoline outlets, restaurants, parking lots, automotive service facilities, street and road construction and projects located in, adjacent to or discharging to environmentally sensitive areas.
  - c. Keep a representative copy of information that is provided to design professionals; and if information is distributed to a large number of design professionals at one, the dates of the mailings and lists of recipients.
9. Adopt and implement SOPs or similar type of documents for site inspection and enforcement of post-construction storm water control measures. These measures will ensure adequate long-term operation and maintenance of approved storm water control measures.
- a. The ordinance will include provisions for both construction-phase and post-construction access for the City to inspect storm water control measures on private properties that discharge to the storm sewer system to ensure that adequate maintenance is being performed. The ordinance may, in lieu of requiring that the Permittee's staff inspect and maintain storm water controls on private property, instead require private property owner/operators or qualified third parties to conduct maintenance and provide annual certification that adequate maintenance has been performed and the structural controls are operating as designed to protect water quality. In this case, the City must require a maintenance agreement addressing maintenance requirements for any control measures installed on site. The agreement must allow the City to conduct oversight inspections of the storm water control measures and also account for transfer of responsibility in leases and/or deeds. The agreement must also allow the City to perform necessary maintenance or corrective actions neglected by the property owner/operator, and bill or recoup costs from the property owner/operator as needed
  - b. Permanent structural BMPs will be inspected at least once during installation by qualified personnel. Upon completion, the City must verify that long-term BMPs were constructed as designed.
  - c. Inspections and any necessary maintenance must be conducted annually by either the City or through a maintenance agreement, the property owner/operator. On sites where the property owner/operator is conducting maintenance, the City shall inspect those storm water control measures at least once every five years, or more frequently as determined by the City to verify and ensure that adequate maintenance is being performed. The City will document its findings in an inspection which includes the following:
    - i. Inspection date;
    - ii. Name and signature of inspector;
    - iii. Project location;
    - iv. Current ownership information;
    - v. A description of the condition of the storm water control measure including the quality of: vegetation and soil; inlet and outlet channels and structures; catch basins; spillways; weirs, and other control structures; and sediment and debris accumulation in storage as well as in and around the inlet and outlet structures;

- vi. Specific maintenance issues or violations found that need to be corrected by the property owner or operator along with deadlines and reinspection dates.
- 9. Provide adequate training for all staff involved in post-construction storm water management, planning and review, and inspections and enforcement. Training will be provided or made available for staff in the fundamentals of long-term storm water management through the use of structural and non-structural control methods. The training records kept will include dates, activities or course descriptions, and names and positions of staff in attendance. The City shall ensure that all new hires are trained upon hire and before commencing storm water related duties and annually thereafter, at a minimum. Follow-up training shall be provided as needed to address changes in procedures, methods or staffing.
- 10. Maintain an inventory of all post-construction structural storm water control measures installed and implemented at new development and redeveloped sites that disturb greater than or equal to one acre, including projects less than one acre that are part of a larger common plan of development or sale. The inventory will include both public and private sector sites located within the City's service area.
  - a. Each entry in the inventory will include basic information on each project, such as project's name, owner's name and contact information, location, start/end date, etc. In addition, inventory entries will include the following for each project;
    - i. Short description of each storm water control measure (type number, design or performance specifications);
    - ii. Short description of maintenance requirements (frequency of required maintenance and inspections); and
    - iii. Inspection information (date, findings, follow up activities, prioritization of follow-up activities, compliance status).
  - b. Based on inspection constructed, the City will update the inventory as appropriate where changes occur in property ownership or the specific control measures implemented at the site.







## Chapter 6

# Pollution Prevention and Good Housekeeping For Municipal Operations

The City will implement the operations and maintenance (O&M) program for City-owned or operated facilities, municipal operations, and structural storm water controls which include standard operating procedures (SOPs), pollution prevention BMPs, storm water pollution prevention plans or similar type of documents, and a training component that have the ultimate goal of preventing or reducing the runoff of pollutants to the City's storm water system and the Waters of the State from municipal operations and facilities.

## Requirements

The minimum performance measures will be as follows:

1. The City will develop and keep current a written inventory of City-owned or operated facilities and storm water control.
2. The City will assess the written inventory of City-owned or operated facilities, operations and storm water controls for their potential to discharge to storm water the following typical urban pollutants: sediment, nutrients, metals, hydrocarbons (e.g., benzene, toluene, ethylbenzene and xylene), pesticides, chlorides, and trash. The City will also determine additional pollutants associated with its facilities that could be found in storm water discharges. A description of the assessment process and findings will be included in this SWMP document.
3. The City will identify as "high-priority" those facilities or operations that have a high potential to generate storm water pollutants. Among the factors that must be considered in giving a facility a high priority ranking is the amount of urban pollutants stored at the site, the identification of improperly stored materials, activities that must be performed outside (e.g., changing automotive fluids), proximity to waterbodies, poor housekeeping practices, and discharge of pollutant(s) of concern to impaired water(s).
  - a. Each "high-priority" facility will develop facility-specific standard operating procedures (SOPs) that include appropriate pollution prevention and good housekeeping procedures for all of the following types of facilities and/or activities:
    - i. Buildings and facilities
    - ii. Material storage areas, heavy equipment storage areas and maintenance areas
    - iii. Parks and open spaces
    - iv. Vehicle and equipment
    - v. Roads, highways, and parking lots
    - vi. Storm water collection and conveyance systems
    - vii. Other facilities and operations not listed above
4. The City will maintain an inventory of all floor drains inside all City-owned or operated buildings.
5. The City will maintain an inventory including a map of all storm drains located on the property of all City-owned or operated buildings and facilities. The City will ensure



that only storm water is allowed into these drains and that the appropriate BMPs are in place to minimize pollutants from entering the MS4.

6. By September 1, 2016, the City shall develop and implement a Storm Water Pollution Prevention Plan (SWPPP) or similar type document for each “high-priority” Permittee-owned or operated facility. The SWPPP shall identify potential sources of pollution that may reasonably be expected to affect the quality of storm water discharges associated with activity from the facility. The SWPPP shall describe and ensure the implementation of standard operating practices (SOPs) that are to be used to reduce the pollutants in storm water discharges associated with activity at the facility and to ensure compliance with the terms and conditions of this Permit. This document shall be tailored and retained at all “high priority” facility locations. The SWPPP shall include a site map showing the following information:
  - a. Property boundaries;
  - b. Buildings and impervious surfaces;
  - c. Directions of storm water flow (use arrows);
  - d. Locations of structural control measures;
  - e. Location and name of the nearest defined drainage(s) which could receive runoff from the facility, whether it contains water or not;
  - f. Locations of all storm water conveyances including ditches, pipes, basins, inlets, and swales;
  - g. Locations where the following activities are exposed to storm water:
    - i. Fixed fueling operations;
    - ii. Vehicle and equipment maintenance and/or cleaning areas;
    - iii. Brine making areas;
    - iv. Loading/unloading areas;
    - v. Waste storage or disposal areas;
    - vi. Liquid storage tanks;
    - vii. Process and equipment operating areas;
    - viii. Materials storage or disposal areas;
    - ix. Locations where significant spills or leaks have occurred;
    - x. Locations of all visual storm water monitoring points;
    - xi. Locations of storm water inlets and outfalls, with a unique identification code for each outfall and an approximate outline of the areas draining to each outfall;
    - xii. Locations of all non-storm water discharges;
    - xiii. Locations of sources of run-on to your site from adjacent property
7. The following inspections shall be conducted at “high priority” Permittee-owned or operated facilities:
  - a. Weekly visual inspections. The City will look for evidence of spills and immediately clean them up to prevent contact with precipitation or runoff. The weekly inspections will be tracked in a log for every facility and records kept with the SWMP document. The inspection log should also include any identified deficiencies and the corrective actions taken to fix the deficiencies.
  - b. At least once per quarter, a comprehensive inspection of “high priority” facilities, including all storm water controls, must be performed, with specific attention paid to waste storage areas, dumpsters, vehicle and equipment maintenance/fueling

areas, material handling areas, and similar pollutant generating areas. The quarterly inspection results must be documented and records kept with the SWMP document. This inspection must be done in accordance with the developed SOPs. An inspection report must also include any identified deficiencies and the corrective actions taken to remedy the deficiencies.

- c. At least once per quarter, the City must visually observe the quality of the storm water discharges from the “high priority” facilities (unless climate conditions preclude doing so, in which case the Permittee must attempt to evaluate the discharges four times during the wet season). Any observed problems (e.g., color, foam, sheen, turbidity) that can be associated with pollutant sources or controls must be remedied to prevent discharge to the storm drain system. Visual observations must be documented and records kept with the SWMP document. This inspection must be done in accordance with the developed SOPs. The inspection report must also include any identified deficiencies and the corrective actions taken to remedy the deficiencies.
8. SOPs shall be developed and implemented for the following types of facilities and/or activities listed below:
- a. Buildings and facilities: SOPs shall address, but is not limited to: City-owned or operated offices, police and fire stations, pools, parking garages, and other City-owned or operated buildings or utilities. The SOPs must address the use, storage and disposal of chemicals and ensure through employee training, that those responsible for handling these products understand and implement the SOPs. All City-owned or operated facilities must develop and ensure that spill prevention plans are in place, if applicable, and coordinate with the local fire department as necessary. The SOPs must address dumpsters and other waste management which includes, but is not limited to, cleaning, washing, painting and other maintenance activities. The City must include a description of schedules and SOPs for sweeping parking lots and keeping the area surrounding the facilities clean to minimize runoff of pollutants. The City must maintain an inventory of all floor drains inside all City-owned or operated buildings. The inventory must be kept current. The Permittee must ensure that all floor drains discharge to appropriate locations.
  - b. Material storage areas, heavy equipment storage areas and maintenance areas. The City shall develop and implement SOPs to protect water quality at each of these facilities owned or operated by the City.
  - c. Parks and open space. SOPs shall address, but are not limited to: the proper application, storage, and disposal of fertilizer, pesticides, and herbicides including minimizing the use of these products and using only in accordance with manufacturer’s instructions; sediment and erosion control; evaluation of lawn maintenance and landscaping activities to ensure practices are protective of water quality such as, proper disposal of lawn clippings and vegetation, and use of alternative landscaping materials such as drought tolerant plants. The SOPs must address the management of trash containers at parks and other open spaces which include scheduled cleanings and establishing a sufficient number of containers, and for placing signage in areas concerning the proper disposal of pet wastes. The SOPs must also address the proper cleaning of maintenance equipment, building

- exterior, trash containers and the disposal of the associated waste and wastewater. Permittees shall implement park and open space maintenance pollution prevention/good housekeeping practices at all park areas, and other open spaces owned or operated by the City.
- d. Vehicle and Equipment. SOPs shall address, but are not limited to: vehicle maintenance and repair activities that occur on City-owned or operated vehicles. BMPs should include using drip pans and absorbents under or around leaky vehicles and equipment or storing indoors where feasible. Fueling areas for City-owned or operated vehicles and equipment shall be evaluated. If possible, place fueling areas under cover in order to minimize exposure. The O & M program shall include SOPs to ensure that vehicle wash waters are not discharged to the MS4 or Waters of the State. The UPDES Permit strictly prohibits such discharges.
  - e. Roads, highways, and parking lots. SOPs shall address, but are not limited to: SOPs and schedule for sweeping streets and City-owned or operated parking lots and any other BMPs designed to reduce road and parking lot debris and other pollutants from entering the MS4; road and parking lot maintenance, including pothole repair, pavement marking, sealing and repaving; cold weather operations, including plowing, sanding, and application of deicing compounds and maintenance of snow disposal areas; right-of-way maintenance, including mowing, herbicide and pesticide application; and municipally-sponsored events such as large outdoor festivals, parades or street fairs. The Permittee must ensure that areas used for snow disposal will not result in discharges to receiving waters.
  - f. Storm water collection and conveyance system. SOPs shall address, but are not limited to: SOPs and schedules for the regular inspection, cleaning, and repair of catch basins, storm water conveyance pipes, ditches and irrigation canals, culverts, structural storm water controls, and structural runoff treatment and/or flow control facilities. The City shall implement catch basin cleaning, storm water system maintenance, scheduled structural BMP inspections and maintenance, and pollution prevention/good housekeeping practices. The City shall prioritize storm sewer system maintenance, with the highest priority areas being maintained at the greatest frequency. Priorities should be driven by water quality concerns, the condition of the receiving water, the amount and type of material that typically accumulates in an area, or other location-specific factors. All City-owned or operated storm water structural BMPs including but not limited to, swales, retention/detention basins or other structures must be inspected annually to ensure that they are properly maintained to reduce the discharge of pollutants into receiving waters. The City shall ensure and document proper disposal methods of all waste and wastewater removed from the storm water conveyance system. These disposal methods apply to, but are not limited to, street sweeping and catch basin cleaning. Materials removed from the MS4 shall be dewatered in a contained, impervious area and discharged to the local sanitary sewer (with approval of local authorities) where feasible. The solid material shall be stored and disposed of properly to avoid discharge to Waters of the State during a storm event. Any other treatment and disposal measures shall be reviewed and approved by the Division. Some materials removed from storm drains and open channels

may require special handling and disposal, and may not be authorized to be disposed of in a landfill.

- g. Other facilities and operations; The City shall identify any facilities and operations not listed above that would reasonably be expected to discharge contaminated runoff, and develop, implement, and document the appropriate BMPs and SWPPP to protect water quality from discharges from these sites.
9. If the City contracts with a third-party to conduct municipal maintenance or allows private developments to conduct their own maintenance, the contractor shall be held to the same standards as the City. This expectation will be defined in contracts between the City and its contractors or the contractors of private developments. The City will be responsible for ensuring, through contractually-required documentation or periodic site visits that contractors are using appropriate storm water controls and following the standard operating procedures, storm water control measures, and good housekeeping practices of the City.
  10. The City will develop and implement a process to assess the water quality impacts in the design of all new flood management structural controls that are associated with the City or that discharge to the MS4. This process will include consideration of controls that can be used to minimize the impacts to site water quality and hydrology while still meeting project objectives. A description of this process will be included in the SWMP document.
  11. Existing flood management structural controls will be assessed to determine whether changes or additions should be made to improve water quality. A description of this process and determinations will be included in the SWMP document.
  12. Public construction projects will comply with the requirements applied to private projects.
  13. The City will identify target employees to participate in training sessions. Training will address the importance of protecting water quality the requirements of the Permit, operation and maintenance requirements, inspection procedures, ways to perform their job activities to prevent or minimize impacts to water quality, SOPs for the various City-owned or operated facilities and procedures for reporting water quality concerns, including potential illicit discharges. Training records will be kept and will include dates, activities or course descriptions, and names and positions of staff in attendance. Follow-up training will be provided as needed to address changes in procedures, methods or staffing.





<p>2nd Year July, 2018</p>	<ul style="list-style-type: none"> <li>Review and update inventory of municipal facilities and operations</li> <li>Inspect all municipal facilities at least once for SWPPP compliance</li> <li>Conduct one training session for municipal employees</li> <li>Review the list of priority storm water treatment and flow control facilities and inspect them after major storm events</li> <li>Obtain a UPDES Permit for any new construction projects</li> <li>Conduct pre-construction meetings to discuss BMPs for all new municipal construction</li> <li>Conduct weekly visual inspections of "high priority" facilities</li> <li>Conduct at least quarterly comprehensive inspections of high priority facilities</li> <li>Visually observe the quality of the storm water discharges from "high priority" facilities at least quarterly</li> <li>Develop and implement a process to assess water quality impacts in the design of all new flood management structural controls that discharge to the City storm water system</li> <li>Assess existing flood management structural controls to determine whether changes or additions should be made to improve water quality</li> </ul>	<p>Ken Klinker</p> <p>Nash Jepps</p> <p>Ken Klinker/ Nash Jepps</p> <p>Ken Klinker</p> <p>Ken Klinker</p> <p>Ken Klinker</p> <p>Nash Jepps</p> <p>Nash Jepps</p> <p>Nash Jepps</p> <p>Ken Klinker/ Engineer</p> <p>Ken Klinker/ Engineer</p>	<p>Need to keep records up-to-date</p> <p>Permit requirement</p> <p>Need to keep employees trained on newest developments</p> <p>Permit requirement</p> <p>City must comply with all NPDES requirements</p> <p>City must comply with all NPDES requirements</p> <p>Permit requirement</p> <p>Permit requirement</p> <p>Permit requirement</p> <p>Permit requirement</p> <p>Permit requirement</p> <p>Permit requirement</p>
<p>3rd Year July, 2019</p>	<ul style="list-style-type: none"> <li>Review and update inventory of municipal facilities and operations</li> <li>Inspect all municipal facilities at least once for SWPPP compliance</li> <li>Conduct one training session for municipal employees</li> <li>Inspect priority storm water treatment and flow control facilities after major storm events</li> <li>Obtain a UPDES Permit for any new construction projects</li> <li>Conduct pre-construction meetings to discuss BMPs for all new municipal construction</li> </ul>	<p>Ken Klinker</p> <p>Nash Jepps</p> <p>Ken Klinker/Nash Jepps</p> <p>Nash Jepps</p> <p>Ken Klinker</p> <p>Ken Klinker</p>	<p>Need to keep records up-to-date</p> <p>Permit requirement</p> <p>Need to keep employees trained on newest developments</p> <p>Permit requirement</p> <p>City must comply with all NPDES requirements</p> <p>City must comply with all NPDES requirements</p>



	<ul style="list-style-type: none"> <li>o Conduct weekly visual inspections of “high priority” facilities</li> <li>o Conduct at least quarterly comprehensive inspections of high priority facilities</li> <li>o Visually observe the quality of the storm water discharges from “high priority” facilities at least quarterly</li> </ul>	Nash Jepps	Permit Requirement Permit Requirement Permit Requirement
4th Year July, 2020	<ul style="list-style-type: none"> <li>o Review and update inventory of municipal facilities and operations</li> <li>o Inspect all municipal facilities at least once for SWPPP compliance</li> <li>o Conduct two training sessions for municipal employees</li> <li>o Inspect priority storm water treatment and flow control facilities after major storm events</li> <li>o Obtain a UPDES Permit for any new construction projects</li> <li>o Conduct pre-construction meetings to discuss BMPS for all new municipal construction</li> <li>o Conduct weekly visual inspections of “high priority” facilities</li> <li>o Conduct at least quarterly comprehensive inspections of high priority facilities</li> <li>o Visually observe the quality of the storm water discharges from “high priority” facilities at least quarterly</li> </ul>	Ken Klinker Ken Klinker/Public Works Ken Klinker Ken Klinker/Public Works Ken Klinker Ken Klinker/Public Works Ken Klinker/Public Works Ken Klinker/Public Works	Need to keep records up-to-date Permit requirement Need to keep employees trained on newest developments Permit requirement City must comply with all NPDES requirements City must comply with all NPDES requirements Permit Requirement Permit Requirement Permit Requirement
5th Year July, 2021	<ul style="list-style-type: none"> <li>o Review and update inventory of municipal facilities and operations</li> <li>o Inspect all municipal facilities at least once for SWPPP compliance</li> <li>o Conduct two training sessions for municipal employees</li> <li>o Inspect priority storm water treatment and flow control facilities after major storm events</li> <li>o Obtain a UPDES Permit for any new construction projects</li> <li>o Conduct pre-construction meetings to discuss BMPS for all new municipal construction</li> </ul>	Ken Klinker Ken Klinker/Public Works Ken Klinker Ken Klinker/Public Works Ken Klinker Ken Klinker/Public Works	Need to keep records up-to-date Permit requirement Need to keep employees trained on newest developments Permit requirement City must comply with all NPDES requirements City must comply with all NPDES requirements

	<ul style="list-style-type: none"><li>o Conduct weekly visual inspections of "high priority" facilities</li><li>o Conduct at least quarterly comprehensive inspections of high priority facilities</li><li>o Visually observe the quality of the storm water discharges from "high priority" facilities at least quarterly</li></ul>	Ken Klinker/Public Works Ken Klinker/Public Works Ken Klinker/Public Works	Permit Requirement Permit Requirement Permit Requirement
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**APPENDIX TO THE FARMINGTON CITY  
STORM WATER MANAGEMENT PROGRAM**

**Appendix A-** List of Coalition activities in which Farmington City will participate

**Appendix B-** Farmington City Illicit Discharge Detection Elimination program

**Appendix C-** Procedure for Locating and Listing Priority Areas Likely to Have Illicit Discharges

**Appendix D-** Title 16 Farmington City Storm Water Ordinance

**Appendix E-** Enforcement Policy for Construction Site Storm Water Runoff Control

**Appendix F-** SOPs for Construction Site Storm Water Runoff Control

**Appendix G-** Enforcement Strategy for Long-Term Storm Water Management in New Development and Redevelopment

**Appendix H-** Documentation on How Title 16 Meets 4.2.5.2.2 of Permit #UTR090006

**Appendix I-** Process to Evaluate and Encourage Low Impact Development (LID)

**Appendix J-** Specific Hydrologic Method for Calculating Runoff Volumes and Flow Rates

**Appendix K-** Procedure for Site Plan Review Which Incorporate Consideration of Water Quality Impacts

**Appendix L-** Inventory of All Post-construction Structural Storm Water Control Measures

**Appendix M-** SOP for Site Inspection and Enforcement of Post-construction Storm Water Control Measures

**Appendix N-** Schedule for Inspecting Existing Long-term Storm Water Management Facilities

**Appendix O-** Plan to Retrofit Existing Developed Sites That Are Adversely Impacting Water Quality

**Appendix P-** Preferred Design Specifications to More Effectively Treat Storm Water

**Appendix Q-** Inventory of All Municipal Facilities and Operations

**Appendix R-** Assessment of Municipal Facilities and Operations For Their Potential to Generate Storm Water Pollutants to the Storm Water System

**Appendix S-** Standard Operating Procedures for City Operations

**Appendix T-** Inventory of All Floor Drains Inside All City-owned or Operated Buildings

**Appendix U-** Process to Assess the Water Quality Impacts in the Design of All New Flood Management Structural Controls That are Associated With the City or Discharge to the MS4

**Appendix V-** Process to Assess Whether Changes or Additions Should be Made to Structural Controls to Improve Water Quality

**Appendix W-** SWMP Documentation Process

**Appendix X-** Fiscal Analysis

**Appendix Y-** Storm water discharge point map

## **Appendix A**

### **Table listing Activities of the Davis County Storm Water Coalition in which Farmington City Will Participate**

1. 4<sup>th</sup> Grade Water Fair
2. Salt Lake County Media Campaign (commercials).
3. Coalition sponsored contractor training
4. Coalition sponsorship of RSI training
5. Produced targeted brochures for distribution to the public
6. Coalition-hired 4<sup>th</sup> grade storm water program teacher
7. Develop standardized SOPs to be adapted by individual cities
8. Produce Coalition BMP manual

## **Appendix B**

### **Farmington City Illicit Discharge Detection Elimination program**

This IDDE program will be implemented by Farmington City to detect and eliminate sources of non-storm water discharges from the MS4 and to implement defined procedures to prevent illicit connections and discharges.

4.2.3.1 A current storm sewer system map of the Farmington is maintained on the City's GIS system.

#### **4.2.3.2 16-4-140: ILLICIT DISCHARGES:**

A. Prohibited: No person or entity shall discharge or cause to be discharged into the city's storm drain system or watercourses any materials, including, but not limited to, pollutants or waters containing any pollutants that cause or contribute to a violation of applicable water quality standards

B. Exceptions: The commencement, conduct or continuance of any illicit discharge to the city's storm drain system is prohibited, except as described as follows:

1. Water line flushing or other potable water sources;
2. Landscape irrigation or lawn watering;
3. Approved diverted stream flows;
4. Groundwater infiltration to storm drains;
5. Uncontaminated pumped groundwater;
6. Air conditioning condensation;
7. Natural riparian habitat or wetland flows;
8. Firefighting activities, and any other water source not containing pollutants;
9. Swimming pools (only if dechlorinated in accordance with federal regulations to less than 0.4 ppm chlorine);
10. Springs;
11. Natural riparian habitat or wetland flows; or
12. Discharges specified in writing by the stormwater official as being necessary to protect public health and safety.

C. Dye Testing: Dye testing is an allowable discharge, but requires a written notification to the stormwater official at least five (5) business days prior to the time of the test.



- D. Permitted Discharges: The prohibitions set forth in this section shall not apply to any nonstormwater discharge permitted under an NPDES permit, waiver or waste discharge order issued to the discharger and administered under the authority of the federal environmental protection agency; provided, that the discharger is in full compliance with all requirements of the permit, waiver or order, and other applicable laws and regulations; and provided, that written approval has been granted for any discharge to the storm drain system by the city.
- E. Connections: The prohibitions set forth in this section expressly include, without limitation, connections made in the past, regardless of whether the connection was permissible under law or practices applicable or prevailing at the time of connection. The prohibition also expressly includes, without limitation, connections of sanitary sewer lines to the storm drain system.
- F. Curbside Drainage Outlets: No person or entity shall install drainage outlets into curbsides unless approved by the city engineer or stormwater official. Approval shall be granted in limited circumstances and must be based on a showing of good cause. (Ord. 2008-03, 1-8-2003)

#### **16-5-040: REMOVAL OF OBSTRUCTION:**

In addition to any penalties which may be imposed pursuant to this title, the city may do the following:

- A. Removal: Remove any of the obstructions and any pipelines or other devices installed in violation of the provisions of this title;
- B. Notice: Give written notice to persons in violation of the provisions of this title requiring the removal of offending installations from natural channels or other storm drainage facilities. Notices may be personally served or may be mailed to violators by registered mail; provided, that a copy is also posted on offending installations for a period of ten (10) days. If such installations are not removed within ten (10) days after notice is given, the city may effect removal at the expense of the person in violation and may recover its costs and expenses therefor; and/or
- C. Abatement: Bring an action for the abatement of the nuisance caused by the offending installation and/or for the recovery of the city's costs and expenses incurred in removing the offending installation pursuant to subsection A or B of this section. (Ord. 2008-03, 1-8-2003)

#### **16-5-050: STOP WORK ORDER; REVOCATION OF PERMIT:**

In the event that any person holding a storm water permit pursuant to this title fails to complete the work required under the permit, fails to comply with all the requirements, conditions and terms of the permit, or violates the terms of the permit, the city may suspend or revoke the storm water permit and/or the applicable site development permit and issue a stop work order as is necessary to eliminate any danger to persons or property and to leave the site in a safe condition. If the city issues a stop work order, the permittee, and its subcontractors, shall immediately stop all work on the project, building or permit activity. Except as otherwise authorized by the city, no work shall be conducted on the project, building or permit activity until and unless the violation has been remedied and the city has issued a reinstated permit. The permittee shall be required to pay a reinstatement fee in

accordance with the Farmington City fee schedule. The city may authorize completion of all necessary temporary or permanent erosion control or stabilization measures and may use authorized bond funds to pay for the same. The permittee shall be liable to the city for all costs and expenses that may be incurred or expended by the city in bringing the property into compliance with the requirements of the permit and any collection costs, including legal fees, incurred by the city. The city may recover these costs through appropriate legal action. (Ord. 2008-03, 1-8-2003)

#### **16-5-060: ORDER COMPLIANCE:**

Whenever the city finds that a person or entity has violated a prohibition or failed to meet a requirement of this title, the authorized enforcement official may order compliance by written notice of violation to the responsible person. Such notice may require, without limitation:

- A. The performance of monitoring, analyses and reporting;
- B. The elimination of illicit connections or discharges;
- C. That violating discharges, practices or operations shall cease and desist;
- D. The abatement or remediation of stormwater pollution or contamination hazards and the restoration of any affected property;
- E. Payment of a fine to cover administrative and remediation costs; and
- F. The implementation of source control or treatment BMPs. (Ord. 2008-03, 1-8-2003)

#### **16-5-065: USE OF BOND PROCEEDS:**

In addition to the remedies and procedures set forth in this chapter, the city is authorized to utilize the bond proceeds in accordance with the terms and conditions of the bond agreement entered into by the parties for the particular project, development or construction activity in accordance with section [16-3-055](#) of this title. (Ord. 2008-03, 1-8-2003)

#### **16-5-070: VIOLATION AND PENALTY:**

- A. Criminal Violation: Any person who violates any provision of this title shall be guilty of a class B misdemeanor and shall be subject to fines as provided in Utah Code Annotated section 76-3-301, as amended, and/or imprisonment as provided in Utah Code Annotated section 76-3-204, as amended. Each day during which any violation of any of the provisions of this title is committed, continued or permitted shall constitute a separate offense.
- B. Civil Penalty: Any person who violates any provision of this title may be subject to civil penalties as more particularly set forth by resolution or ordinance of the city council.
- C. Damages: If, as the result of the violation of any provision of this title, the city or any other party suffers damage and is required to make repairs to and/or replace any materials, the cost of the repair or replacement shall be borne by the party in violation, in addition to any criminal fines and/or penalties.
- D. Nuisance: In addition to the penalties provided herein, any condition caused or permitted to exist in violation of any of the provisions of this title shall be considered a threat to the

public health, safety, welfare and the environment, and may be declared and deemed a nuisance by the stormwater official, or his or her designee, and may be abated and/or restored by the city in accordance with nuisance procedures.

- E. Other Relief: This section shall not limit the authority of any court of competent jurisdiction to impose any other sanction or order any other relief as may be appropriate and lawful under local, state or federal law. (Ord. 2008-03, 1-8-2003)

#### 4.2.3.2.1 **16-1-030: ADMINISTRATION AND INTERPRETATION:**

The city manager is hereby designated as the city's authorized enforcement official and as such shall implement, administer and enforce the provisions of this title. Any powers granted or duties imposed upon the city manager may be delegated by the city manager or the city council to persons or entities acting in the beneficial interest of or in the employ of the city. (Ord. 2008-03, 1-8-2003; and. 2016 Code)

##### 4.2.3.3.1 Priority areas likely to have illicit discharge:

A.

## **Appendix C**

### **Procedure for Locating and Listing Priority Areas Likely to Have Illicit Discharge**

1. Locate on the zoning map areas zoned for residential, commercial, industrial and mixed uses.
2. Discuss with the planning and public works departments which areas are oldest and most likely to have illicit connections.
3. Discuss with the County Public Health Department where there are permitted on-site sewage disposal systems or where there have been instances of sewer overflows or cross-connections
4. Identify sensitive water bodies in the community and use the zoning map to identify areas upstream from these water bodies.
5. Based on identified areas, develop a priority list of most likely areas to have illicit discharges and document the basis for the selection of each priority area.
6. Update the list annually.

## **Appendix D**

### **Title 16 Farmington City Storm Water Ordinance**

**Below is a link to the Farmington City Storm Water Ordinance. A hard copy can be reviewed at Farmington City Hall.**

**[http://www.sterlingcodifiers.com/codebook/index.php?book\\_id=1042](http://www.sterlingcodifiers.com/codebook/index.php?book_id=1042)**

## **Appendix E**

### **Enforcement Policy for Construction Site Storm Water Runoff Control**

**(Note: This policy will be updated to make sure it meets all the requirements of the current UPDES permit.)**

#### **Farmington City Storm Water Ordinance Enforcement Policy**

The intent of the following policy for enforcing the Farmington City Title 16 Storm Water Ordinance is to encourage builders and developers in Farmington to police their construction sites and make sure there are no violations present before it is identified by City employees. This self-policing is intended to help ensure that there are fewer incidences of contamination of the City's storm water system which could be violations of the City's Utah Pollutant Discharge Elimination System (UPDES) permit.

#### **Storm Water Ordinance Enforcement Policy:**

1. At the time of building permit application, the applicant shall submit an application for a Storm Water Permit with its associated fee, an approved UPDES Permit from the State of Utah (this can be obtained on-line at <https://secure.utah.gov/stormwater/>) and a copy of the Storm Water Pollution Prevention Plan (SWPPP) that has been prepared in conjunction with the UPDES Permit or a copy of the contract transferring responsibility for the Developer's SWPPP to the applicant.
2. At the time of Building Permit issuance, the applicant shall post a \$1000 cash bond to cover costs, required performance and fines for violations as authorized in the bond agreement.
3. If violations of the ordinance are identified, the applicant will be given a Notice of Violation posted at the location of the violation providing 24 hours for the violation to be addressed, and warning that a Stop Work Notice will follow along with a \$100/violation/day fine to be deducted from the storm water cash bond.
4. If the violation is still evident after 24 hours, a Stop Work Notice will be posted at the site, a photo to document the violation will be taken and kept in the building permit file, and a fine in the amount of \$100/violation/day since the violation was first noted will be deducted from the bond. If there is evidence that illegal materials actually entered the storm water system, the fine will be doubled to \$200/violation/day. These fines are authorized by Farmington City Ordinance 16-5-060 (e).
5. Each violation of the ordinance will be subject to the fine for each day the violation exists.
6. If the bond amount remaining drops below \$250, a Stop Work Notice will be posted at the site preventing work from continuing until the balance of the bond has been increased back up to \$1000.
7. After the final inspection of the project by the Storm Water Official or his/her designee, the balance of the bond to be released will be computed, and the bond will be released.



8. Failure to comply with a Stop Work Notice could result in the issuance of a Citation, potentially resulting in additional fines or penalties.
9. Citations may be issued to individuals or subcontractors who are identified committing violations of the Storm Water Ordinance.
10. Spills or severe contamination of the storm water system will be reported to the Davis County Health department for investigation and prosecution. Their escalating fine procedure will be implemented depending on the severity of the violation.

## **Appendix F**

### **SOPs for Construction Site Storm Water Runoff Control**

#### **SOPs to include:**

- 1. Pre-construction SWPPP Review**
- 2. Construction Site Inspection**
- 3. Procedure to be notified by builders when active construction is completed to verify stabilization and removal of temporary BMPs**

#### **4.2.4.3 SOP for pre-construction SWPPP review**

1. Require SWPPP for all land disturbing operations that include excavation and/or footing and foundation construction. SWPPP to be submitted with building permit application or improvement drawings for subdivisions.
2. SWPPP shall meet all UPDES permit requirements for projects that disturb greater than or equal to one acre of ground or are part of a common plan of development. SWPPP shall meet city requirements for projects less than one acre and not part of a common plan of development.
3. Staff will review submitted SWPPPs prior to issuing a building permit or prior to a pre-construction meeting for subdivisions. The SWPPP review will use a pre-construction review checklist to ensure requirements are being met.
4. Staff review will include checking to see if the developer has evaluated the LID opportunities at the site.
5. Staff will identify priority construction sites considering the following factors at a minimum:
  - Soil erosion potential;
  - Site slope;
  - Project size and type;
  - Sensitivity of receiving waterbodies;
  - Proximity to receiving waterbodies; and,
  - Non-storm water discharges and past record of non-compliance by the operators of the construction site.

#### **4.2.4.4 SOP for construction site inspections**

1. All new construction sites with a land disturbance of greater than or equal to one acre, including projects less than one acre that are part of a larger common plan of development or sale at least monthly by the Farmington City Storm Water Inspector using the Construction Storm Water Inspection Form (Checklist) found on the Division's website. Priority construction sites will be inspected bi-weekly.
2. The Inspector will inspect sites prior to land disturbance, during active construction, and following active construction.
3. The inspector will submit a copy of his inspection to the operator, noting any violations and requirements for remediation. Fines for violations that cannot be

remediated, such as evidence that pollutants of entered a storm drain or concrete washout on the ground, will be deducted from the storm water bond at this time.

4. Once the deadline for remediation has been passed, a re-inspection will take place to ensure all corrections have been made. If items have not been corrected, a fine will be deducted from the storm water bond and the operator will be notified of the continuing violation. Additional fines will be deducted on a daily basis as needed until the violations have been corrected.
5. A number for reporting issues on construction sites will be published on the Farmington City web site.
6. A record of violations, enforcement actions and corrective actions will be kept by the Storm Water Inspector.

#### 4.2.4.4.2 Procedure for being notified by construction operators/owners of their completion of active construction.

1. Operators will be required to get a UPDES permit for project greater than or equal to one acre of land disturbance or which are part of a common plan of development. This permit will include a Notice of Termination form which will be submitted to the state upon completion of the project.
2. When the NOT shows up on the list of unverified NOTs, the Storm Water Inspector will inspect the property to assure the project final stabilization is complete and the temporary control measures have been removed.

**Appendix G**  
**Enforcement Strategy Long-Term Storm Water Management in New Development and Redevelopment**

4.2.5.4 Procedure for site plan review which evaluate water quality impacts.

1. Require new developments to provide an analysis of potential pollutants that could impact water quality.
2. Require a description of BMPs that will be used to mitigate the water quality impact of any potential pollutants and rationale for selection of that BMP.
3. Require design specifications for proposed BMPs.
4. Require maintenance plans for long-term BMPs that are selected.

4.2.5.3.2 Process to evaluate LID approach which encourages the implementation of BMPs that infiltrate, evapotranspire or harvest and use storm water from the site to protect water quality.

1. Require new development plans to document the evaluation of LID approaches to storm water management.
2. Review the evaluation of LID approaches to make sure they have included BMPs to infiltrate, evapotranspire, harvest or use storm water from the site to protect water quality.
3. Review the proposed design of BMPs to make sure they meet the minimum standards required by the City.
4. If an LID approach cannot be utilized, require documentation explaining reasons preventing this approach and the rationale for the chosen alternative controls.

4.2.5.3.3 Plan to retrofit existing developed sites that are adversely impacting water quality

1. Create an inventory of developed sites that are adversely impacting water quality
2. Rank the site to determine those most suitable for retrofitting using the following criteria:
  - a. Proximity to waterbody
  - b. Status of waterbody to improve impaired waterbodies and protect unimpaired waterbodies
  - c. Hydrologic condition of the receiving waterbody
  - d. Proximity to sensitive ecosystem or protected area
  - e. Any upcoming sites that could be further enhanced by retrofitting storm water controls
3. Notify the owner of the need to stop adversely impacting water quality
4. Require submittal of a plan by the owner to address the cause of the adverse impact on water quality. The submitted plan must emphasize controls that infiltrate, evapotranspire or harvest and use storm water discharges.
5. Review submitted plans and indicate whether they are acceptable.

6. Require owner to implement the plan to mitigate the source of the adverse impact on water quality.
7. Inspect the installation of the BMPs designed to mitigate the source of the adverse impact on water quality.

## **Appendix H**

**Documentation on How Title 16 Meets 4.2.5.2.2 of Permit #UTR090006**

**TO BE COMPLETED IN THE FIRST YEAR AND ADDED TO THE SWMP  
WHEN COMPLETE**



**Appendix I**  
**Process to Evaluate and Encourage Low Impact Development (LID)**

4.2.5.3.2 Process to evaluate LID approach which encourages the implementation of BMPs that infiltrate, evapotranspire or harvest and use storm water from the site to protect water quality.

1. Require new development plans to document the evaluation of LID approaches to storm water management.
2. Review the evaluation of LID approaches to make sure they have included BMPs to infiltrate, evapotranspire, harvest or use storm water from the site to protect water quality.
3. Review the proposed design of BMPs to make sure they meet the minimum standards required by the City.
4. If an LID approach cannot be utilized, require documentation explaining reasons preventing this approach and the rationale for the chosen alternative controls.

**Appendix J**  
**Specific Hydrologic Method for Calculating Runoff Volumes and Flow Rates**

Farmington City Zoning Ordinance 11-3-105 (1) (a) defines the “rational method” for computing runoff volume and flow rates.

## **Appendix K**

### **Procedure for Site Plan Review Which Incorporate Consideration of Water Quality Impacts**

4.2.5.4 Procedure for site plan review which evaluate water quality impacts.

1. Require new developments to provide an analysis of potential pollutants that could impact water quality.
2. Require a description of BMPs that will be used to mitigate the water quality impact of any potential pollutants and rationale for selection of that BMP.
3. Require design specifications for proposed BMPs.
4. Require maintenance plans for long-term BMPs that are selected.

## Appendix L

### Inventory of All Post-construction Structural Storm Water Control Measures

Detention Basin #	Address	# in AutoCAD	Subdivision	Year Designed	Size Measured (Acres)	Size Designed (Acres)	Capacity (ft <sup>3</sup> )	Notes
1	834 W Royal Oak Ct	1	Summer Wood	1985	0.2782		10,000	
2	1800 North 3473 W	2	Farmington City		0.434885			
3	1584-1596 N Oakridge Park Dr	3	Farmington City		0.517212			
4	1512 N Stayner Dr	4	Oakridge Village		0.161305	0.71	30,928	
5	1531 N Old Shepards Rd	5	The Village at Old Farm		Not Realistic	0.865		Detention and storm drain owned and operated by gardner old farm, LLC and Gardner BTS Old Farm, LLC
6	473 West 1300 North	6	Hidden Meadow, Hidden Quail, Forest Glen		Not Realistic			Google Earth shows no detention basin on this side hill
7	1418 North 1700 West	7	Silverwood			0.93		
9	1300 North 600 West	8	Hidden Meadow		0.140376	Can't Read it		
10	189 and Sheppard Ln	9	Commission of Utah and UDOT		0.101009			
11	425 West 1150 North	10	Quail Cove P.U.D. / Quail Run		0.162446			Doesn't say theres a Det. Basin. Check constructions Plans
12	950 North 1927-1930 West	11	CCP Farmington LLC		0.434311			
13	Burke Ln 675 N 750 West	12	Davis County and UDOT		22.076084			
14	Burke Ln 675 N 1720 West	13	Farmington Hollow		1.81243	Can't find anything		
15	600 North 900 East	14	Farmington City		2.485001			
16	475 North 1535 West	15	American West Development		3.052919	Can't find anything		
17	325 N Paria View 2184 W	16	Farmington Ranches		0.088634			Farmington Ranches Phase 6. Worth looking into the plots/farmington Ranches East Subd. in the folder to see if there is another Detention Basin
18	Clark Ln 100 N 1100 West Park Ln	17	American West Development		3.533454	Can't find anything		
19	Creston Dr 5 N 1421 W	18	Farmington Greens 2C		0.176539			
20	226 S 1275 West	19	Farmington Greens PUD Plat 4		0.192731			
21	250 S 1525 West	20	Enterprises LLC Jung Family		1.366521			
22	475 South 1418 West	21	Chestnut Farms		0.459374			
23	470 South 1525 West	22	Chestnut Farms		1.325857			
24	500 South 783 West	23	Farmington City		Not Realistic			
25	585 South 660 West	24	Miller Meadows		3.268753			
26	1063 South 70 East	25	Farmington City Corp		0.247714			
27	Frontage Rd 1218 S	26	Cave Hollow Subdivision		0.359453			
28	Frontage Rd 1302 S	27	Cave Hollow Subdivision		0.325246			
29	Frontage Rd 1550 S	28	Symphony Homes		3.229237			
		29						

Stormtech detention systems-

Station Park  
Cabelas

## **Appendix M**

### **SOP for Site Inspection and Enforcement of Post-construction Storm Water Control Measures**

#### **STREETS/STORM DRAIN – Detention Ponds**

**1. Preparation:**

- a. Remove any sediment and trash off grates.**
- b. Do a visual inspection to make sure grates are in good shape and everything is in good working order.**
- c. Pull grates, inspect inside of basin.**

**Process:**

- d. Start cleaning by using backhoe to remove silt and sediment off the bottom and try to keep anything from going downstream.**
- e. Put all sediment into a dump truck.**

**Clean-up:**

- f. After cleaning basins, clean off the concrete pads.**
- g. Make sure they are swept up and clean.**
- h. Haul to and dump trucks in the landfill.**

**Documentation:**

- i. Keep logs of number of detention ponds cleaned.**
  - j. Record the amount of waste collected.**
- c. Keep any notes or comments on any problems.**

## **Appendix N**

### **Schedule for Inspecting Existing Long-term Storm Water Management Facilities**

**TO BE COMPLETED IN FIRST YEAR AND INCLUDED IN SWMP WHEN  
DONE**



## **Appendix O**

**Plan to Retrofit Existing Developed Sites That Are Adversely Impacting Water  
Quality**

**TO BE COMPLETED IN FIRST YEAR AND INCLUDED IN SWMP WHEN  
DONE**

**Appendix P**  
**Preferred Design Specifications to More Effectively Treat Storm Water**

- ♦ **SPECIAL PROVISIONS – FARMINGTON CITY STORMWATER BMPs**  
(These standards are supplemental to the best management practices (BMPs) outlined in the Farmington City Stormwater Management Plan. Only those details as indicated below have been included in this document. Refer to the Stormwater Management Plan document for additional information.)

#### CONSTRUCTION SITE STORMWATER RUNOFF CONTROL

##### *MINIMIZE CLEARING*

- 901 Land Grading
- 902 Permanent Diversions
- 903 Preservation of Natural Vegetation (included)

##### *STABILIZE EXPOSED SOILS*

- 904 Chemical Stabilization (included)
- 905 Mulching (included)
- 906 Permanent Seeding (included)
- 907 Sodding
- 908 Soil Roughening (included)

##### *PERIMETER CONTROLS*

- 909 Temporary Diversion Dikes, Earth Dikes, & Interceptor Dikes (included)
- 910 Erosion control Devices (Silt Fence / Straw Bales) (included)
- 911 Aggressive Street Sweeping for Contractors (included)

##### *PHASE CONSTRUCTION*

- 912 Construction sequencing
- 913 Dust Control (included)

##### *INSTALL SEDIMENT TRAPPING DEVICES*

- 914 Sediment Basins and Rock Dams (included)
- 915 Sediment Filters and Sediment Chambers
- 916 Sediment Trap (included)

##### *INLET PROTECTION*

- 917 Stabilized Construction Entrances (included)
- 918 Storm Drain Inlet Protection (included)

##### *EDUCATION AND AWARENESS*

- 919 Contractor Certification & Inspector Training

##### *PROTECT STEEP SLOPES*

- 920 Geotextiles (included)
- 921 Soil Retention
- 922 Temporary Slope Drain (included)
- 923 Temporary storm drain diversion

##### *STABILIZE DRAINAGE WAYS*

- 924 Check Dams (included)
- 925 Filter Berms
- 926 Grass-Lined Channels
- 927 Riprap (included)

*PROTECT WATERWAYS*

- 928 Temporary Stream Crossings (included)
- 929 Vegetated Buffer

*EDUCATION AND AWARENESS*

- 930 BMP Inspection and Maintenance
- 931 Equipment and Vehicle Wash Down Area (included)

*POST-CONSTRUCTION STORMWATER MANAGEMENT IN NEW  
DEVELOPMENT AND REDEVELOPMENT*

*RUNOFF PRETREATMENT PRACTICES*

- 932 Catch Basins / Catch Basin Insert
- 933 In-Line Storage
- 934 Manufactured Products for Stormwater Inlets

*VEGETATIVE PRACTICES*

- 935 Stormwater Wetland (included)
- 936 Grassed Swales
- 937 Grassed Filter Strip (included)

*BETTER SITE DESIGN*

- 938 Conservation Easements
- 939 Infrastructure Planning
- 940 Open Space Design
- 941 Narrower Residential Streets
- 942 Reduction of Curbs and Gutters
- 943 Green Parking
- 944 Urban Forestry
- 945 Alternative Pavers
- 946 Buffer Zones

*PONDS*

- 947 Dry Extended Detention Pond (included)
- 948 Wet Ponds (included)

*POLLUTION PREVENTION AND GOOD HOUSEKEEPING*

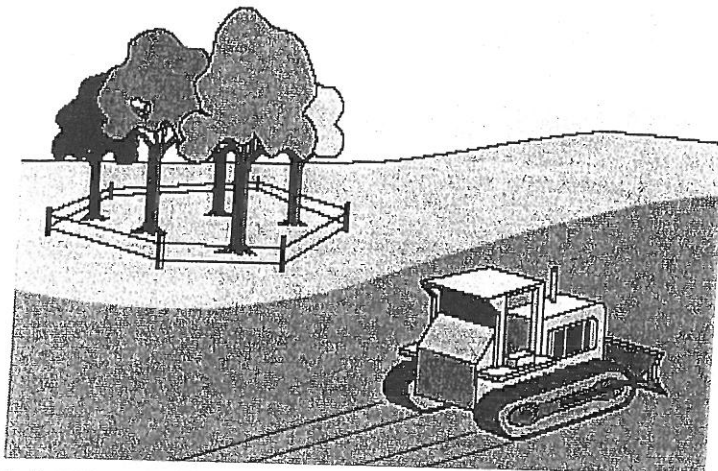
*SOURCE CONTROLS*

- 949 Street and Parking Lot Sweeping
- 950 Inlet Cleaning
- 951 Landscaping and Lawn Care
- 952 Illegal Dumping Control
- 953 Automobile Maintenance
- 954 Vehicle Washing
- 955 Pest Control
- 956 Roadway and Bridge Maintenance

*MATERIALS MANAGEMENT*

- 957 Hazardous Materials Storage (included)
- 958 Road Salt Application and Storage
- 959 Spill Response and Prevention (included)
- 960 Used Oil Recycling
- 961 Portable Toilet (included)

## 903 BMP: Preservation of Existing Vegetation



### DESCRIPTION:

Carefully planned preservation of existing vegetation minimizes the potential of removing or injuring existing trees, vines, shrubs and/or grasses that serve as erosion controls.

### APPLICATIONS:

This technique is applicable to all types of sites. Areas where preserving vegetation can be particularly beneficial are floodplains, wetlands, stream banks, steep slopes, and other areas where erosion controls would be difficult to establish, install, or maintain.

### INSTALLATION/APPLICATION CRITERIA:

- Clearly mark, flag or fence vegetation or areas where vegetation should be preserved.
- Prepare landscaping plans which include as much existing vegetation as possible and state proper care during and after construction.
- Define and protect with berms, fencing, signs, etc. a setback area from vegetation to be preserved.
- Propose landscaping plans which do not include plant species that compete with the existing vegetation.
- Do not locate construction traffic routes, spoil piles, etc. where significant adverse impact on existing vegetation may occur.

### LIMITATIONS:

- Requires forward planning by the owner/developer, contractor and design staff.
- For sites with diverse topography, it is often difficult and expensive to save existing trees while grading the site satisfactorily for the planned development.
- May not be cost effective with high land costs.

### MAINTENANCE:

- Inspection and maintenance requirements for protection of vegetation are low.
- Maintenance of native trees or vegetation should conform to landscape plan specifications.

### OBJECTIVES

- ☐ Housekeeping Practices
- ☐ Contain Waste
- ☒ Minimize Disturbed Areas
- ☒ Stabilize Disturbed Areas
- ☒ Protect Slopes/Channels
- ☒ Control Site Perimeter
- ☐ Control Internal Erosion



### TARGETED POLLUTANTS

- ☒ Sediment
- ☐ Nutrients
- ☐ Toxic Materials
- ☐ Oil & Grease
- ☐ Floatable Materials
- ☐ Other Waste

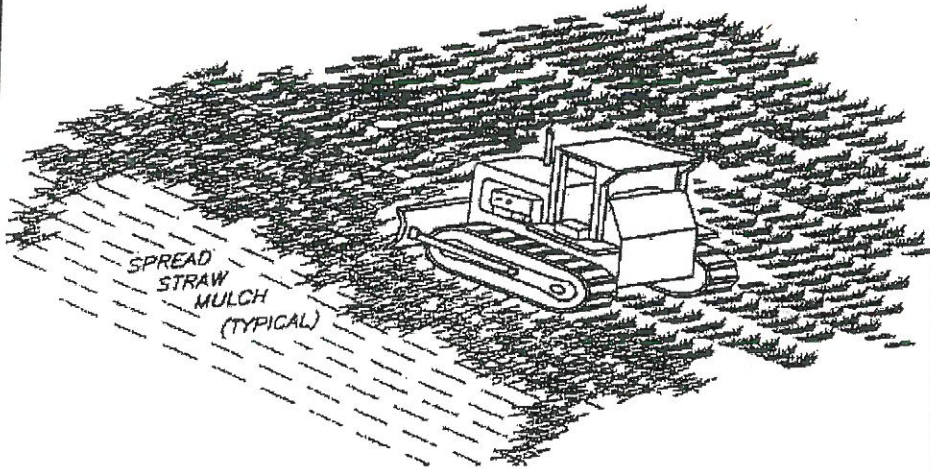
- ☒ High Impact
- ☒ Medium Impact
- ☐ Low or Unknown Impact

### IMPLEMENTATION REQUIREMENTS

- ☐ Capital Costs
- ☐ O&M Costs
- ☐ Maintenance
- ☐ Training

- ☒ High ☒ Medium ☐ Low

## 904A BMP: Chemical Mulch



### DESCRIPTION:

Applying materials such as vinyl, asphalt, plastics, or rubber on an unprotected slope to temporarily stabilize the slope.

### APPLICATIONS:

- As a tacking agent to aid the stabilization of mulches (where matting is not used).
- As a short-term alternative in areas where temporary seeding practices cannot be used because of seasonal condition or climate.
- On steep and rocky slopes where neither mechanical methods or mulches and protective netting can be effectively applied.

### INSTALLATION/APPLICATION CRITERIA:

- The application rates and procedures recommended by the manufacturer of a chemical stabilization product should be followed to prevent the products from forming ponds and from creating large areas where moisture cannot get through.
- For permanent application, chemical mulches (when used with seed and mulch) should be applied over wood fiber or straw mulch.

### LIMITATIONS:

- Chemical mulches can create impervious surfaces and impact water quality if not properly applied.
- Some products may not be suitable for use near live streams.

### MAINTENANCE:

- Inspect at regular intervals and after each runoff-producing storm event or at a minimum every two weeks.
- Replace chemical mulch as needed to ensure adequate level of coverage.

### OBJECTIVES

- ☐ Housekeeping Practices
- ☐ Contain Waste
- ☐ Minimize Disturbed Areas
- ☒ Stabilize Disturbed Areas
- ☒ Protect Slopes/Channels
- ☐ Control Site Perimeter
- ☒ Control Internal Erosion



### TARGETED POLLUTANTS

- ☒ Sediment
- ☒ Nutrients
- ☐ Toxic Materials
- ☐ Oil & Grease
- ☐ Floatable Materials
- ☐ Other Waste

- ☒ High Impact
- ☒ Medium Impact
- ☐ Low or Unknown Impact

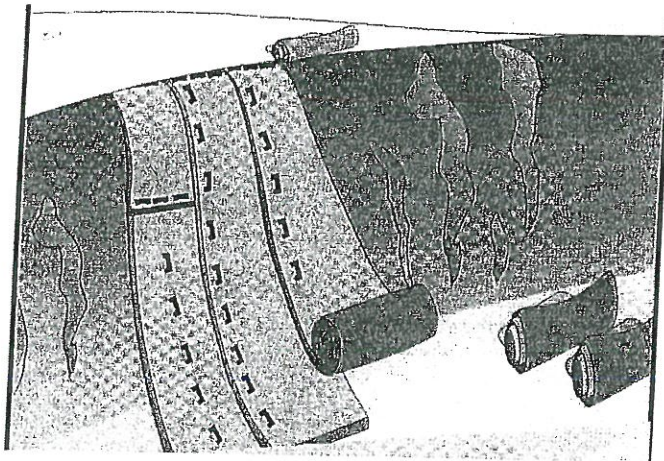
### IMPLEMENTATION REQUIREMENTS

- ☒ Capital Costs
- ☐ O&M Costs
- ☐ Maintenance
- ☐ Training

- ☒ High ☒ Medium ☐ Low



## 904B BMP: Erosion Control Blankets



### DESCRIPTION:

Erosion control blankets are used on areas of high velocity runoff and/or steep grade, to aid in controlling erosion on critical areas by protecting young vegetation.

### APPLICATION:

- Where vegetation is likely to grow too slowly to provide adequate stabilization.
- In areas subject to high winds where mulch would not be effective.

### INSTALLATION/APPLICATION CRITERIA:

- Install erosion control blankets parallel to the direction of the slope.
- In ditches, apply in direction of the flow.
- Place erosion control blankets loosely on soil-do not stretch.
- Ends of blankets should be buried no less than six inches deep.
- Staple the edges of the blanket at least every three feet - per manufacturers' specifications

### LIMITATIONS:

- Not recommended in areas which are still under construction.

### MAINTENANCE:

- Check for erosion and undermining periodically, particularly after rainstorms.
- Repair dislocations or failures immediately.
- If washouts occur, reinstall after repairing slope damage.
- Monitor until permanently stabilized.

### OBJECTIVES

- ☐ Housekeeping Practices
- ☐ Contain Waste
- ☐ Minimize Disturbed Areas
- ☒ Stabilize Disturbed Areas
- ☒ Protect Slopes/Channels
- ☐ Control Site Perimeter
- ☐ Control Internal Erosion



### TARGETED POLLUTANTS

- ☒ Sediment
- ☒ Nutrients
- ☐ Toxic Materials
- ☐ Oil & Grease
- ☐ Floatable Materials
- ☐ Other Waste

- ☒ High Impact
- ☒ Medium Impact
- ☐ Low or Unknown Impact

### IMPLEMENTATION REQUIREMENTS

- ☒ Capital Costs
- ☒ O&M Costs
- ☒ Maintenance
- ☐ Training

- ☒ High ☒ Medium ☐ Low

## 905A BMP: Mulching

### DESCRIPTION:

Placement of material such as straw, grass, woodchips, woodfibers or fabricated matting over open area.

### APPLICATION:

- Any exposed area to remain untouched longer than 14 days and that will be exposed less than 60 days (seed areas to be exposed in excess of 60 days).
- Areas that have been seeded.
- Stockpiled soil material.

Material	Application	Depth	Comments
Gravel: Washed 1/4" to 1-1/2"	9 cy/1000 sf	3 inches	Good for traffic areas Good for short slopes
Straw: Air-dried, free of seeds and coarse material	2-3 bales/1000 sf	2 inches min.	Subject to wind blowing Tack down or keep moist
Wood Fiber Cellulose: Free from growth inhibitors; dyed green	35 lb/1000 sf	1 inch	For critical areas, double application rate; Limit to slopes < 3% and < 150 feet

### INSTALLATION/APPLICATION CRITERIA:

- Roughen area to receive mulch to create depressions that mulch material can settle into.
- Apply mulch to required thickness and anchor as necessary.
- Ensure material used is weed free and does not contain any constituents that will inhibit plant growth.

### LIMITATIONS:

- Anchoring may be required to prevent migration of mulch material.
- Downgradient control may be required to prevent mulch material being transported to storm water system.

### MAINTENANCE:

- Inspect mulched areas after every rainfall event and at a minimum of monthly.
- Replace mulch on any bare areas and reanchor as necessary.
- Clean and replace downgradient controls as necessary

### OBJECTIVES

- Housekeeping Practices
- ☐ Contain Waste
- ☐ Minimize Disturbed Areas
- ☒ Stabilize Disturbed Areas
- ☒ Protect Slopes/Channels
- ☐ Control Site Perimeter
- ☐ Control Internal Erosion



### TARGETED POLLUTANTS

- Sediment
- ☒ Nutrients
- ☐ Toxic Materials
- ☐ Oil & Grease
- ☐ Floatable Materials
- ☐ Other Waste

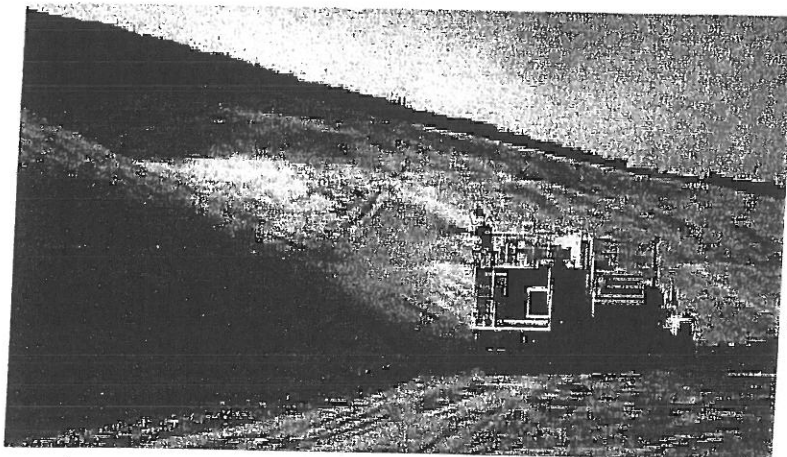
- High Impact
- ☒ Medium Impact
- ☐ Low or Unknown Impact

### IMPLEMENTATION REQUIREMENTS

- ☒ Capital Costs
- ☒ O&M Costs
- ☒ Maintenance
- ☐ Training

- High Impact
- ☒ Medium Impact
- ☐ Low or Unknown Impact
- High ☒ Medium ☐ Low

## 905B BMP: Hydromulching



### DESCRIPTION:

A combination of wood fiber mulch, processed grass, or hay or straw mulch and a tacking agent. It is made into a slurry, then applied to bare slopes or other bare areas to provide temporary stabilization.

### APPLICATION:

- Small roadside slopes
- Large, relatively flat areas

### INSTALLATION/APPLICATION CRITERIA:

- Legume seeds should be pellet inoculated with the appropriate bacteria.
- The seed should not remain in the hydromulcher tank for more than 30 minutes
- Wood fiber may be dyed to aid in uniform application
- Slurry should be uniformly applied until an adequate coverage is achieved
- The applicator should not be directed at one location for a long period of time; erosion will occur

### LIMITATIONS:

- Will lose effectiveness after 1 year
- Can use only on physically stable slopes (at natural angle of repose, or less)

### MAINTENANCE:

- Periodically inspect for damage caused by wind, water or human disturbance
- Promptly repair damaged areas

### OBJECTIVES

- ☐ Housekeeping Practices
- ☐ Contain Waste
- ☐ Minimize Disturbed Areas
- ☒ Stabilize Disturbed Areas
- ☒ Protect Slopes/Channels
- ☐ Control Site Perimeter
- ☐ Control Internal Erosion



### TARGETED POLLUTANTS

- ☒ Sediment
- ☐ Nutrients
- ☐ Toxic Materials
- ☐ Oil & Grease
- ☒ Floatable Materials
- ☐ Other Waste

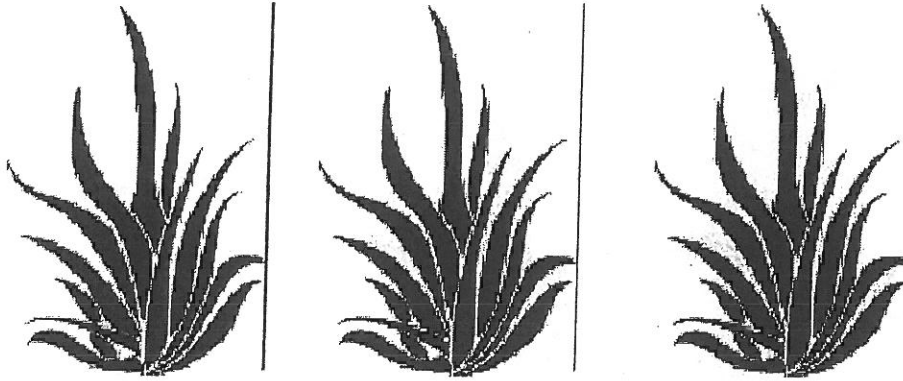
- ☒ High Impact
- ☒ Medium Impact
- ☐ Low or Unknown Impact

### IMPLEMENTATION REQUIREMENTS

- ☒ Capital Costs
- ☐ O&M Costs
- ☒ Maintenance
- ☒ Training

- ☒ High ☒ Medium ☐ Low

## 906 BMP: Temporary and Permanent Seeding



### OBJECTIVES

- ☐ Housekeeping Practices
- ☐ Contain Waste
- ☐ Minimize Disturbed Areas
- ☒ Stabilize Disturbed Areas
- ☒ Protect Slopes/Channels
- ☐ Control Site Perimeter
- ☐ Control Internal Erosion



### DEFINITION:

Temporary seeding - establishment of short term cover by application of rapidly germinating seed mix (alternatively hydroseeding may be utilized). Permanent seeding - establishment of final term cover by application of perennial seed mix (alternatively sod may be utilized).

### APPLICATION:

Disturbed areas that are at final grade and which will not be disturbed by continuing activities on site. Also areas that are not at final grade but which will be left untouched in excess of one year.

### RECOMMENDED SEED MIX:

The recommended seed mix will be dependent on site specific information such as elevation, exposure, soils, water available and topography. Check with the County Extension Service for recommended mixes for site specific conditions:

Utah State University Extension Service  
28 East State Street (Room 20)  
Farmington, Utah 84025  
phone (801) 451-3412

### LIMITATIONS:

- Limited to areas that will not be subject to traffic or high usage.
- May require irrigation and fertilizer which creates potential for impacting runoff quality.
- May only be applied during appropriate planting season, temporary cover required until that time.

### INSTALLATION:

- Roughen soil to a depth of 2 inches. Add fertilizer, manure, topsoil as necessary.
- Evenly distribute seed using a commonly accepted method such as; breast seeding, drilling, hydroseeding.
- Use a seed mix appropriate for soil and location that will provide rapid germination and growth. Check with County for recommended mix and application rate.
- Cover area with mulch if required due to steep slopes or unsuitable weather conditions.

### MAINTENANCE:

- Provide irrigation as required to establish growth and to maintain plant cover through duration of project.
- Reseed as necessary to provide 75% coverage
- Remediate any areas damaged by erosion or traffic.
- When 75% coverage is achieved inspect monthly for damage and remediate as necessary.

### TARGETED POLLUTANTS

- ☒ Sediment
- ☒ Nutrients
- ☐ Toxic Materials
- ☐ Oil & Grease
- ☐ Floatable Materials
- ☐ Other Waste

- ☒ High Impact
- ☒ Medium Impact
- ☐ Low or Unknown Impact

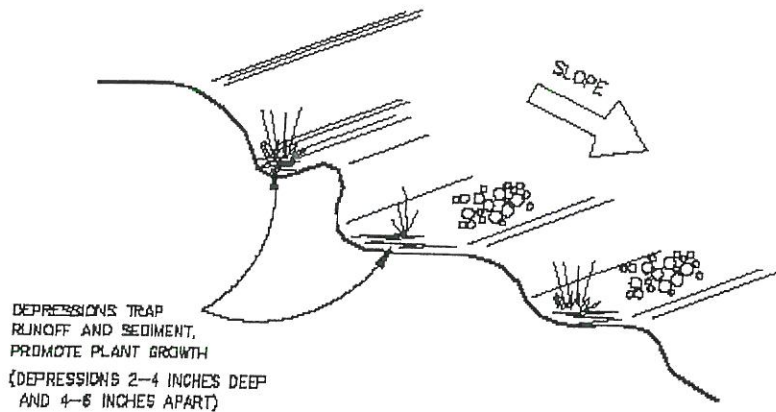
### IMPLEMENTATION REQUIREMENTS

- ☒ Capital Costs
- ☐ O&M Costs
- ☒ Maintenance
- ☐ Training

- ☒ High ☒ Medium ☐ Low



## 908 BMP: Surface Roughening



### DESCRIPTION:

Rough preparation of working areas leaving depressions and uneven surface. Depressions should be done parallel to contours.

### APPLICATION:

Surface roughening is appropriate for all construction that will not be receiving impervious cover within 14 days and that will be exposed less than 60 days (seed areas to be open in excess of 60 days).

### INSTALLATION/APPLICATION CRITERIA:

- Surface should be left in rough condition during initial earthwork activity.
- Surfaces that have become smoothed or compacted due to equipment traffic should be roughened by use of disks, spring harrows, teeth on front end loader, or similar, operating along the contours of the slope. Tracking (by crawler tractor driving up and down slope) may also be used to provide depressions parallel to contours.
- Avoid compaction of soils during roughening as this inhibits plant growth and promotes storm water runoff. Limit tracked machinery to sandy soil.
- Seed or mulch areas to be exposed in excess of 60 days.
- Employ dust controls. (See Dust Control Detail Sheet).

### LIMITATIONS:

- Will not withstand heavy rainfall.
- Slopes steeper than 2:1 (50%) should be benched. (See Benching Detail Sheet).

### MAINTENANCE:

- Inspect following any storm event and at a minimum of weekly.
- If erosion in the form of rills (small waterways formed by runoff) is evident, perform machine roughening of area.
- For vegetated slopes reseed areas that are bare or have been reworked.

### OBJECTIVES

- ☐ Housekeeping Practices
- ☐ Contain Waste
- ☐ Minimize Disturbed Areas
- ☒ Stabilize Disturbed Areas
- ☒ Protect Slopes/Channels
- ☐ Control Site Perimeter
- ☒ Control Internal Erosion



### TARGETED POLLUTANTS

- ☒ Sediment
- ☐ Nutrients
- ☐ Toxic Materials
- ☐ Oil & Grease
- ☐ Floatable Materials
- ☐ Other Waste

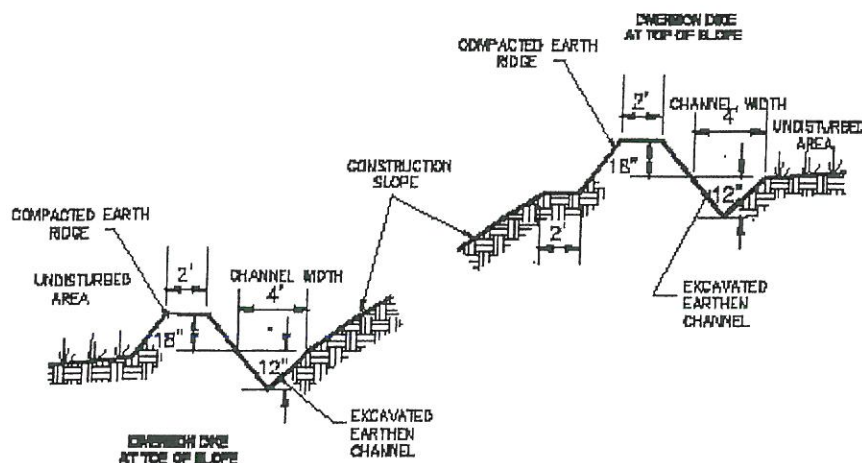
- ☒ High Impact
- ☒ Medium Impact
- ☐ Low or Unknown Impact

### IMPLEMENTATION REQUIREMENTS

- ☒ Capital Costs
- ☒ O&M Costs
- ☒ Maintenance
- ☐ Training

- ☒ High ☒ Medium ☐ Low

## 909A BMP: Diversion Dike



### DESCRIPTION:

A temporary sediment barrier and storm runoff conveyance consisting of an excavation channel and compacted earth ridge.

### APPLICATION:

- Construct along top of construction slope to intercept upgradient runoff and convey around construction site.
- Construct along toe of construction to divert sediment laden runoff.
- Construct along midpoint of construction slope to intercept runoff and channel to controlled discharge point.
- Construct around base of soil stockpiles to capture sediment.
- Construct around perimeter of disturbed areas to capture sediment.

### INSTALLATION/APPLICATION CRITERIA:

- Clear and grub area for dike construction.
- Excavate channel and place soil on downgradient side.
- Shape and machine compact excavated soil to form ridge.
- Place erosion protection (riprap, mulch) at outlet.
- Stabilize channel and ridge as required with mulch, gravel, or vegetative cover.

### LIMITATIONS:

- Recommended maximum drainage area of 5 acres
- Recommended maximum sideslopes of 2h:1v (50%)
- Recommended maximum slope on channel of 1%

### MAINTENANCE:

- Inspect immediately after any rainfall and at least daily during prolonged rainfall.
- Look for runoff breaching dike or eroding channel or sideslopes.
- Check discharge point for erosion or bypassing of flows.
- Repair and stabilize as necessary.
- Inspect daily during vehicular activity on slope, check for and repair any traffic damage.

### OBJECTIVES

- ☐ Housekeeping Practices
- ☒ Contain Waste
- ☐ Minimize Disturbed Areas
- ☐ Stabilize Disturbed Areas
- ☒ Protect Slopes/Channels
- ☒ Control Site Perimeter
- ☒ Control Internal Erosion



### TARGETED POLLUTANTS

- ☒ Sediment
- ☐ Nutrients
- ☐ Toxic Materials
- ☐ Oil & Grease
- ☐ Floatable Materials
- ☐ Other Waste

- ☒ High Impact
- ☒ Medium Impact
- ☐ Low or Unknown Impact

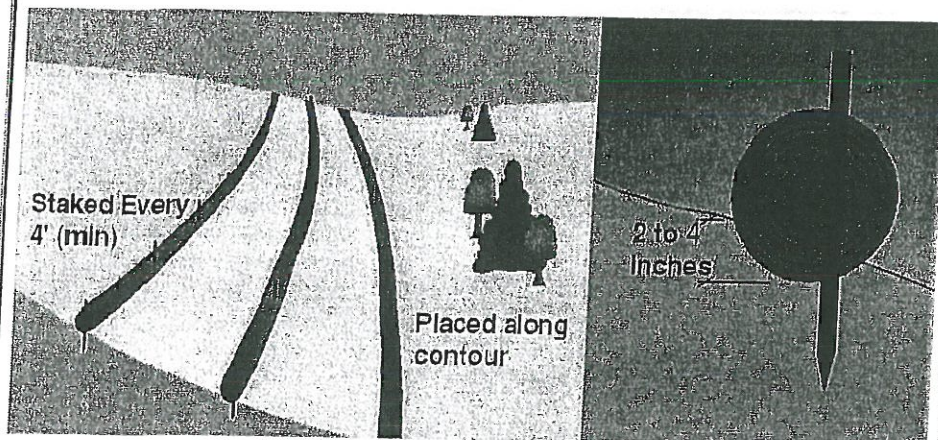
### IMPLEMENTATION REQUIREMENTS

- ☒ Capital Costs
- ☐ O&M Costs
- ☒ Maintenance
- ☐ Training

- ☒ High ☒ Medium ☐ Low



## 909B BMP: Fiber Rolls



### DESCRIPTION:

Commercial products can be made from various types of fibers and shavings that are rolled up and used as sediment barriers.

### APPLICATION:

- Good for sites with long slopes, generally flatter than 10:1

### INSTALLATION/APPLICATION CRITERIA:

- Must be trenched into the ground 2 to 4 inches
- Must be staked every 4 feet (maximum)
- Manufacturer's instructions must be followed for installation of product

### LIMITATIONS:

- Not applicable for high velocity flows
- Only use for a time period within the expected life-span of the product (check with manufacturer)

### MAINTENANCE:

- Must be checked to ensure that runoff does not run under or bypass the fiber rolls
- Sediment build up must also be checked and excess sediment must be removed

### OBJECTIVES

- ☐ Housekeeping Practices
- ☐ Contain Waste
- ☐ Minimize Disturbed Areas
- ☐ Stabilize Disturbed Areas
- ☒ Protect Slopes/Channels
- ☒ Control Site Perimeter
- ☐ Control Internal Erosion



### TARGETED POLLUTANTS

- ☒ Sediment
- ☐ Nutrients
- ☐ Toxic Materials
- ☐ Oil & Grease
- ☐ Floatable Materials
- ☐ Other Waste

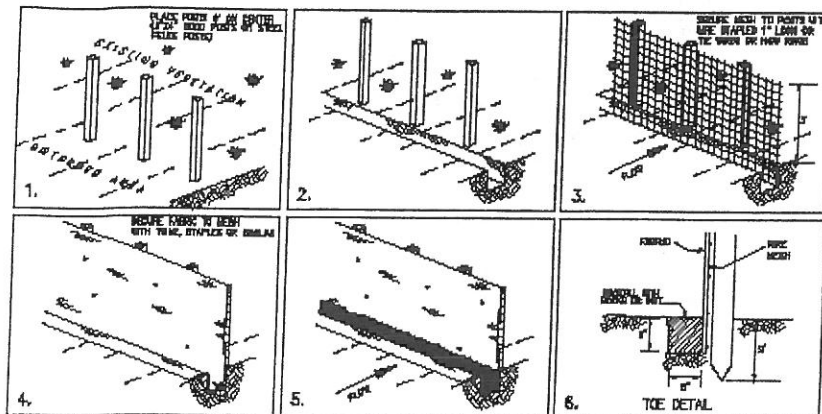
- ☒ High Impact
- ☒ Medium Impact
- ☐ Low or Unknown Impact

### IMPLEMENTATION REQUIREMENTS

- ☒ Capital Costs
- ☐ O&M Costs
- ☐ Maintenance
- ☐ Training

- ☒ High ☒ Medium ☐ Low

## 910A BMP: Silt Fence



### OBJECTIVES

- ☐ Housekeeping Practices
- ☐ Contain Waste
- ☐ Minimize Disturbed Areas
- ☐ Stabilize Disturbed Areas
- ☒ Protect Slopes/Channels
- ☒ Control Site Perimeter
- ☒ Control Internal Erosion



### DESCRIPTION:

A temporary sediment barrier consisting of entrenched filter fabric stretched across and secured to supporting posts.

### APPLICATION:

- Perimeter control: place barrier at downgradient limits of disturbance
- Sediment barrier: place barrier at toe of slope or soil stockpile
- Protection of existing waterways: place barrier at top of stream bank
- Inlet protection: place fence surrounding catchbasins

### INSTALLATION/APPLICATION CRITERIA:

- Place posts 6 feet apart on center along contour (or use preassembled unit) and drive 2 feet minimum into ground. Excavate an anchor trench immediately upgradient of posts.
- Secure wire mesh (14 gage min. With 6 inch openings) to upslope side of posts.
- Attach with heavy duty 1 inch long wire staples, tie wires or hog rings.
- Cut fabric to required width, unroll along length of barrier and drape over barrier. Secure fabric to mesh with twine, staples, or similar, with trailing edge extending into anchor trench.
- Backfill trench over filter fabric to anchor.

### LIMITATIONS:

- Recommended maximum drainage area of 0.5 acre per 100 feet of fence
- Recommended maximum upgradient slope length of 150 feet
- Recommended maximum uphill grade of 2:1 (50%)
- Recommended maximum flow rate of 0.5 cfs
- Ponding should not be allowed behind fence

### MAINTENANCE:

- Inspect immediately after any rainfall and at least daily during prolonged rainfall.
- Look for runoff bypassing ends of barriers or undercutting barriers.
- Repair or replace damaged areas of the barrier and remove accumulated sediment.
- Reanchor fence as necessary to prevent shortcutting.
- Remove accumulated sediment when it reaches ½ the height of the fence.

### TARGETED POLLUTANTS

- ☒ Sediment
- ☐ Nutrients
- ☐ Toxic Materials
- ☐ Oil & Grease
- ☐ Floatable Materials
- ☐ Other Waste

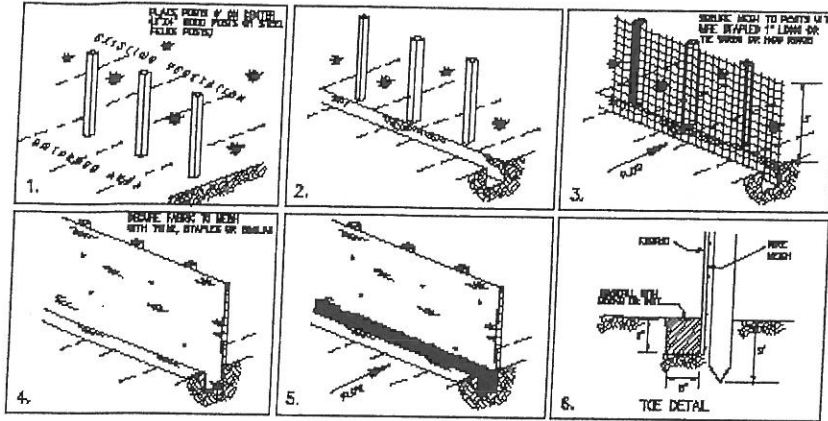
- ☒ High Impact
- ☒ Medium Impact
- ☐ Low or Unknown Impact

### IMPLEMENTATION REQUIREMENTS

- ☒ Capital Costs
- ☒ O&M Costs
- ☒ Maintenance
- ☐ Training

- ☒ High Impact
- ☒ Medium Impact
- ☐ Low or Unknown Impact
- ☒ High ☒ Medium ☐ Low

## 910B BMP: Silt Fence without Wire Mesh



### DESCRIPTION:

A temporary sediment barrier consisting of entrenched filter fabric stretched across and secured to supporting posts.

### APPLICATION:

- Perimeter control: place barrier at down gradient limits of disturbance
- Sediment barrier: place barrier at toe of slope or soil stockpile
- Protection of existing waterways: place barrier at top of stream bank
- Inlet protection: place fence surrounding catch basins

### INSTALLATION/APPLICATION CRITERIA:

- Place posts 6 feet apart on center along contour (or use preassembled unit) and drive 2 feet minimum into ground. Excavate an anchor trench immediately up gradient of posts.
- Cut fabric to required width, unroll along length of barrier and drape over barrier. Secure fabric to mesh with twine, staples, or similar, with trailing edge extending into anchor trench.
- Backfill trench over filter fabric to anchor.
- Fabric must have 85% minimum sediment removal efficiency

### LIMITATIONS:

- Recommended maximum drainage area of 0.5 acre per 100 feet of fence
- Recommended maximum upgradient slope length of 150 feet
- Recommended maximum uphill grade of 2:1 (50%)
- Recommended maximum flow rate of 0.5 cfs
- Ponding should not be allowed behind fence

### MAINTENANCE:

- Inspect immediately after any rainfall and at least daily during prolonged rainfall.
- Look for runoff bypassing ends of barriers or undercutting barriers.
- Repair or replace damaged areas of the barrier and remove accumulated sediment.
- Reanchor fence as necessary to prevent shortcutting.
- Remove accumulated sediment when it reaches  $\frac{1}{2}$  the height of the fence.

### OBJECTIVES

- ☐ Housekeeping Practices
- ☐ Contain Waste
- ☐ Minimize Disturbed Areas
- ☐ Stabilize Disturbed Areas
- ☒ Protect Slopes/Channels
- ☒ Control Site Perimeter
- ☒ Control Internal Erosion



### TARGETED POLLUTANTS

- ☒ Sediment
- ☐ Nutrients
- ☐ Toxic Materials
- ☐ Oil & Grease
- ☐ Floatable Materials
- ☐ Other Waste

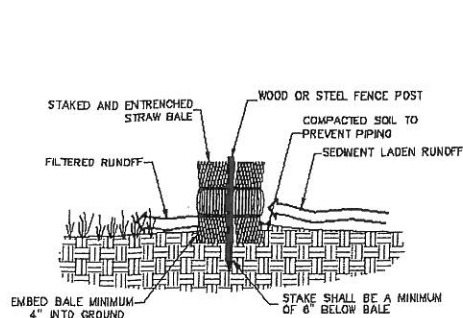
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- ☒ Medium Impact
- ☐ Low or Unknown Impact

### IMPLEMENTATION REQUIREMENTS

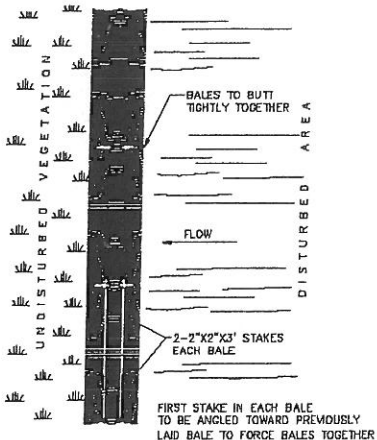
- ☒ Capital Costs
- ☒ O&M Costs
- ☒ Maintenance
- ☐ Training

- ☒ High Impact
- ☒ Medium Impact
- ☐ Low or Unknown Impact
- ☒ High ☒ Medium ☐ Low

## 910C BMP: Straw Bale Barrier



**SECTION**



**PLAN**

### DESCRIPTION:

Temporary sediment barrier consisting of a row of entrenched and anchored straw bales.

### APPLICATION:

- Perimeter Control: place barrier at downgradient limits of disturbance.
- Sediment barrier: place barrier at toe of slope or soil stockpile.
- Protection of existing waterways: place barrier at top of stream bank.
- Inlet Protection.

### INSTALLATION/APPLICATION CRITERIA:

- Excavate a 4-inch minimum deep trench along contour line, i.e. parallel to slope, removing all grass and other material that may allow underflow.
- Place bales in trench with ends tightly abutting, fill any gaps by wedging loose straw into openings.
- Anchor each bale with 2 stakes driven flush with the top of the bale.
- Backfill around bale and compact to prevent piping, backfill on uphill side to be built up 4-inches above ground at the barrier.

### LIMITATIONS:

- Recommended maximum area of 0.5 acre per 100 feet of barrier
- Recommended maximum upgradient slope length of 150 feet
- Recommended maximum uphill grade of 2:1 (50%)

### MAINTENANCE:

- Inspect immediately after any rainfall and at least daily during prolonged rainfall.
- Look for runoff bypassing ends of barriers or undercutting barriers.
- Repair or replace damaged areas of the barrier and remove accumulated sediment.
- Realign bales as necessary to provide continuous barrier and fill gaps.
- Recompect soil around barrier as necessary to prevent piping.

### OBJECTIVES

- ☐ Housekeeping Practices
- ☐ Contain Waste
- ☐ Minimize Disturbed Areas
- ☐ Stabilize Disturbed Areas
- ☒ Protect Slopes/Channels
- ☒ Control Site Perimeter
- ☒ Control Internal Erosion



### TARGETED POLLUTANTS

- ☒ Sediment
- ☐ Nutrients
- ☐ Toxic Materials
- ☐ Oil & Grease
- ☐ Floatable Materials
- ☐ Other Waste

- ☒ High Impact
- ☒ Medium Impact
- ☐ Low or Unknown Impact

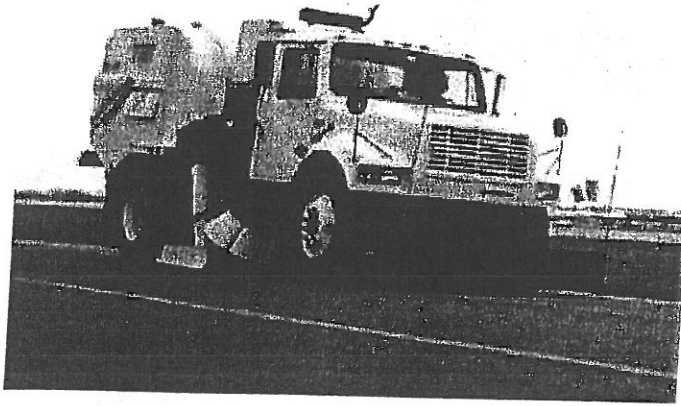
### IMPLEMENTATION REQUIREMENTS

- ☒ Capital Costs
- ☐ O&M Costs
- ☒ Maintenance
- ☐ Training

- ☒ High ☒ Medium ☐ Low



## 911 BMP: Street Cleaning



### PROGRAM ELEMENTS

- ☐ New Development
- ☐ Residential
- ☐ Commercial Activities
- ☐ Industrial Activities
- ☒ Municipal Facilities
- ☒ Illegal Discharges



### DESCRIPTION:

Reduce the discharges of pollutants to stormwater from street surfaces by conducting street cleaning on a regular basis.

### APPLICATION:

- Useful for any paved streets near construction sites where sediment is blown, tracked, or spilled onto the streets

### APPROACH:

- Prioritize cleaning to use the most sophisticated sweepers, at the highest frequency, and in areas with the highest pollutant loading.
- Street cleaning should be done on a daily basis if necessary
- Restrict street parking prior to and during sweeping.
- Increase sweeping frequency just before the rainy season.
- Proper maintenance and operation of sweepers greatly increase their efficiency.
- Keep accurate operation logs to track programs.
- Reduce the number of parked vehicles using regulations.
- Sweepers effective at removing smaller particles (less than 10 microns) may generate dust that would lead to concerns over worker and public safety.
- Equipment selection can be key for this particular BMP. There are two types used, the mechanical broom sweepers (more effective at picking up large debris and cleaning wet streets), and the vacuum sweepers (more effective at removing fine particles and associated heavy metals). Many communities find it useful to have a compliment of both types in their fleet.

### LIMITATIONS:

- Conventional sweepers are not able to remove oil and grease.
- Mechanical sweepers are not effective at removing finer sediments.
- Effectiveness may also be limited by street conditions, traffic congestion, presence of construction projects, climatic conditions and condition of curbs.

### MAINTENANCE:

- Replace worn parts as necessary.
- Install main and gutter brooms of the appropriate weight.

### TARGETED POLLUTANTS

- Sediment
- Nutrients
- Heavy Metals
- ☒ Toxic Materials
- Oxygen Demanding Substances
- ☐ Oil & Grease
- ☒ Floatable Materials
- ☐ Bacteria & Viruses

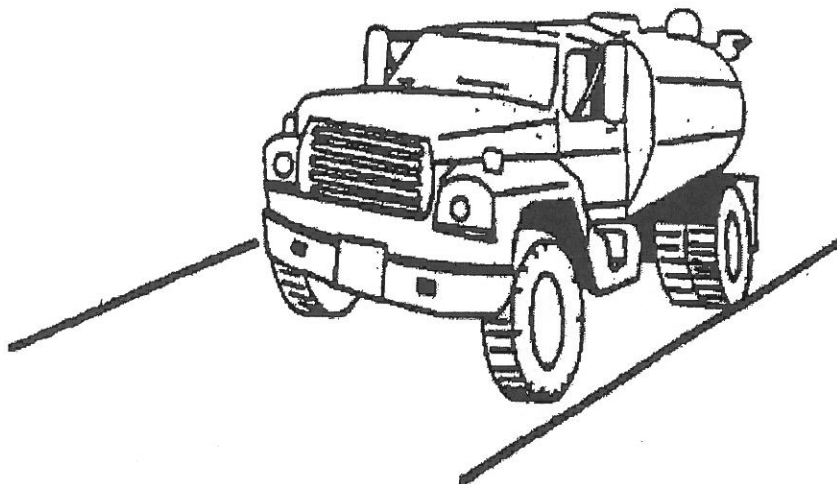
- High Impact
- ☒ Medium Impact
- ☐ Low or Unknown Impact

### IMPLEMENTATION REQUIREMENTS

- Capital Costs
- O&M Costs
- ☒ Regulatory
- ☒ Training
- Staffing
- ☒ Administrative

- High ☒ Medium ☐ Low

## 913 BMP: Dust Controls



### DESCRIPTION:

Dust control measures are used to stabilize soil from wind erosion, and reduce dust by construction activities.

### APPLICATION:

Dust control is useful in any process area, loading and unloading area, material handling areas, and transfer areas where dust is generated. Street sweeping is limited to areas that are paved.

### INSTALLATION/APPLICATION CRITERIA:

- Mechanical dust collection systems are designed according to the size of dust particles and the amount of air to be processed. Manufacturers' recommendations should be followed for installation (as well as the design of the equipment).
- Two kinds of street sweepers are common: brush and vacuum. Vacuum sweepers are more efficient and work best when the area is dry.
- Mechanical equipment should be operated according to the manufacturers' recommendations and should be inspected regularly.

### LIMITATIONS:

- Is generally more expensive than manual systems.
- May be impossible to maintain by plant personnel (the more elaborate equipment).
- Is labor and equipment intensive and may not be effective for all pollutants (street sweepers).

### MAINTENANCE:

If water sprayers are used, dust-contaminated waters should be collected and taken for treatment. Areas will probably need to be resprayed to keep dust from spreading.

### OBJECTIVES

- ☒ Housekeeping Practices
- ☐ Contain Waste
- ☒ Minimize Disturbed Areas
- ☒ Stabilize Disturbed Areas
- ☐ Protect Slopes/Channels
- ☐ Control Site Perimeter
- ☐ Control Internal Erosion



### TARGETED POLLUTANTS

- ☒ Sediment
- ☐ Nutrients
- ☐ Toxic Materials
- ☐ Oil & Grease
- ☐ Floatable Materials
- ☐ Other Waste

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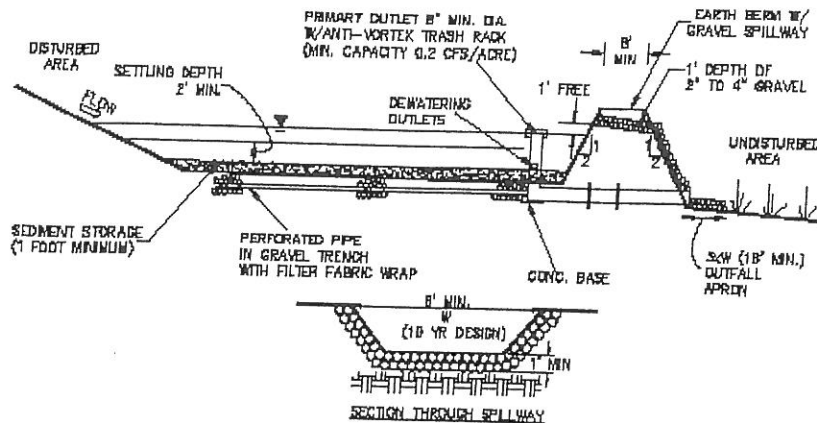
### IMPLEMENTATION REQUIREMENTS

- ☒ Capital Costs
- ☐ O&M Costs
- ☒ Maintenance
- ☒ Training

- |  |
|--|
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## 914 BMP: Sediment Basin



### DESCRIPTION:

A pond created by excavation or construction of an embankment, and designed to retain or detain runoff sufficiently to allow excessive sediment to settle.

### APPLICATION:

- At the outlet of all disturbed watersheds 10 acres or larger.
- At the outlet of smaller disturbed watersheds, as necessary.
- Where post construction detention basins will be located.

### INSTALLATION/APPLICATION CRITERIA:

- Design basin for site specific location, maintain effective flow length 2 times width.
- Excavate basin or construct compacted berm containment, ensure no downgradient hazard if failure should occur. (Provide minimum of 67 CY. Per acre of drainage area).
- Construct dewatering and outfall structure and emergency spillway with apron.

### LIMITATIONS:

- Should be sized based on anticipated runoff, sediment loading and drainage area size.
- May require silt fence at outlet for entrapment of very fine silts and clays.
- May require safety fencing to prevent public access.
- Height restrictions for embankment regulated by Utah Division of Dam Safety.

### MAINTENANCE:

- Inspect after each rainfall event and at a minimum of monthly.
- Repair any damage to berm, spillway or sidewalls.
- Remove accumulated sediment as it reaches 2/3 height of available storage.
- Check outlet for sedimentation/erosion of downgradient area and remediate as necessary. Install silt fence if sedimentation apparent.

### OBJECTIVES

- ☐ Housekeeping Practices
- ☐ Contain Waste
- ☐ Minimize Disturbed Areas
- ☐ Stabilize Disturbed Areas
- ☐ Protect Slopes/Channels
- ☐ Control Site Perimeter
- ☒ Control Internal Erosion



### TARGETED POLLUTANTS

- ☒ Sediment
- ☐ Nutrients
- ☒ Toxic Materials
- ☐ Oil & Grease
- ☒ Floatable Materials
- ☐ Other Waste

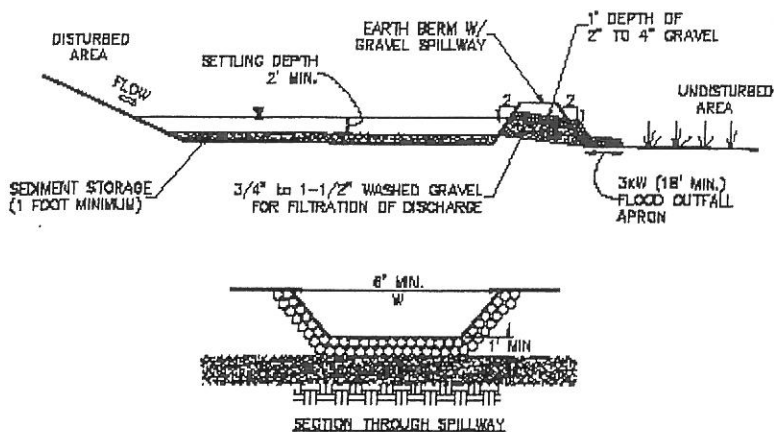
- ☒ High Impact
- ☒ Medium Impact
- ☐ Low or Unknown Impact

### IMPLEMENTATION REQUIREMENTS

- ☒ Capital Costs
- ☒ O&M Costs
- ☒ Maintenance
- ☐ Training

- ☒ High ☒ Medium ☐ Low

## 916A BMP: Sediment Trap



### OBJECTIVES

- ☐ Housekeeping Practices
- ☐ Contain Waste
- ☐ Minimize Disturbed Areas
- ☐ Stabilize Disturbed Areas
- ☐ Protect Slopes/Channels
- ☐ Control Site Perimeter
- ☒ Control Internal Erosion



### DESCRIPTION:

A sediment trap is a small excavated or bermed area where runoff from small drainage areas is detained and sediment can settle.

### APPLICATION:

- Temporary control for runoff from disturbed areas of less than 3 acres.
- Temporary control for discharge from diversion dike, surface benching, or other temporary drainage measures.

### INSTALLATION/APPLICATION CRITERIA:

- Design basin for site specific location.
- Excavate basin or construct compacted berm containment.
- Construct outfall spillway with apron.
- Provide downstream silt fence if necessary.

### LIMITATIONS:

- Should be sized based on anticipated runoff, sediment loading and drainage area size.
- May require silt fence at outlet for entrapment of very fine silts and clays.

### MAINTENANCE:

- Inspect after each rainfall event and at a minimum of monthly.
- Repair any damage to berm, spillway or sidewalls.
- Remove accumulated sediment as it reaches 2/3 height of available storage.
- Check outlet for sedimentation/erosion of downgradient area and remediate as necessary. Install silt fence if sedimentation apparent.

### TARGETED POLLUTANTS

- ☒ Sediment
- ☐ Nutrients
- ☒ Toxic Materials
- ☐ Oil & Grease
- ☐ Floatable Materials
- ☐ Other Waste

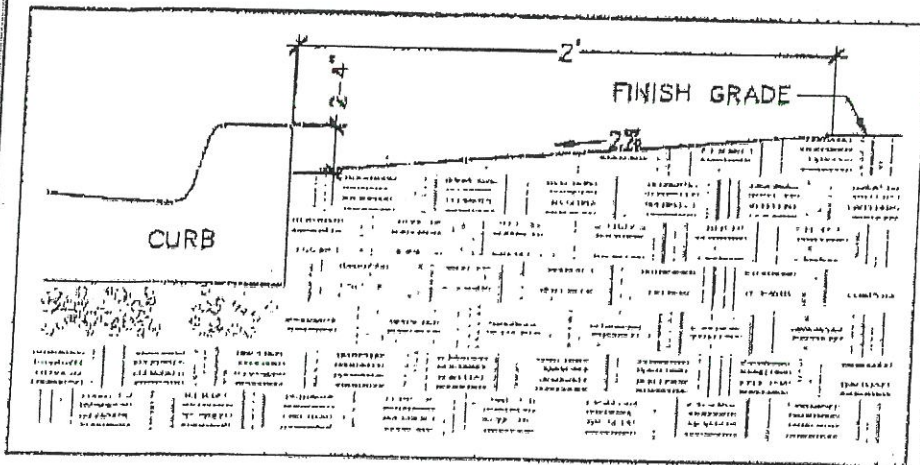
- ☒ High Impact
- ☒ Medium Impact
- ☐ Low or Unknown Impact

### IMPLEMENTATION REQUIREMENTS

- ☒ Capital Costs
- ☒ O&M Costs
- ☐ Maintenance
- ☐ Training

- ☒ High ☒ Medium ☐ Low

## 916B BMP: Curb Sedimentation Trap



### OBJECTIVES

- ☐ Housekeeping Practices
- ☐ Contain Waste
- ☐ Minimize Disturbed Areas
- ☐ Stabilize Disturbed Areas
- ☐ Protect Slopes/Channels
- ☐ Control Site Perimeter
- ☒ Control Internal Erosion



### DESCRIPTION:

A temporary sediment trap formed by excavation behind the curb

### APPLICATION:

- Interception of runoff containing sediment from the lot during construction
- Retain sediment on the lot during construction

### INSTALLATION/APPLICATION CRITERIA:

- Excavate soil behind curb to a depth of 2-4 inches
- Create slope of 2% from finished grade to curb for a distance of approximately 2 feet.

### LIMITATIONS:

- No limitations

### MAINTENANCE:

- Inspect after each rainfall event and at a minimum of monthly.
- Remove accumulated sediment as it reaches 2/3 height of available storage.

### TARGETED POLLUTANTS

- ☒ Sediment
- ☐ Nutrients
- ☒ Toxic Materials
- ☐ Oil & Grease
- ☒ Floatable Materials
- ☐ Other Waste

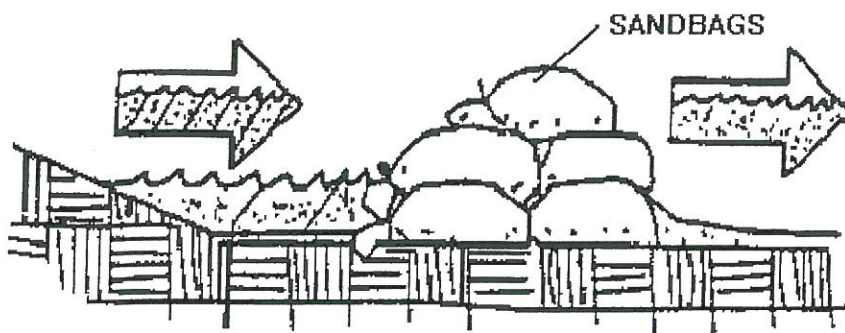
- ☒ High Impact
- ☒ Medium Impact
- ☐ Low or Unknown Impact

### IMPLEMENTATION REQUIREMENTS

- ☒ Capital Costs
- ☐ O&M Costs
- ☒ Maintenance
- ☐ Training

- ☒ High ☒ Medium ☐ Low

## 916C BMP: Sand Bag Barrier



### DESCRIPTION:

Stacking sand bags along a level contour creates a barrier which detains sediment-laden water, ponding water upstream of the barrier and promoting sedimentation

### APPLICATION:

- Along the perimeter of the site
- May be used in drainage areas up to 5 acres
- Along streams and channels
- Across swales with small catchments
- Around temporary spoil areas
- Below the toe of a cleared slope

### INSTALLATION/APPLICATION CRITERIA:

- Install along a level contour
- Base of sand bag barrier should be at least 48" wide
- Height of sand bag barrier should be at least 18" high
- 4" PVC pipe may be installed between the top layer of sand bags to drain large flood flows
- Provide area behind barrier for runoff to pond and sediment to settle
- Place below the toe of a slope
- UV resistant bags should be used

### LIMITATIONS:

- Sand bags are more expensive than other barriers, but also more durable
- Burlap should not be used

### MAINTENANCE:

- Inspect after each rain and a minimum of once every two weeks
- Reshape or replace damaged sandbags immediately
- Remove buildup of sediment

### OBJECTIVES

- ☐ Housekeeping Practices
- ☐ Contain Waste
- ☐ Minimize Disturbed Areas
- ☐ Stabilize Disturbed Areas
- ☐ Protect Slopes/Channels
- ☐ Control Site Perimeter
- ☒ Control Internal Erosion



### TARGETED POLLUTANTS

- ☒ Sediment
- ☐ Nutrients
- ☒ Toxic Materials
- ☐ Oil & Grease
- ☒ Floatable Materials
- ☐ Other Waste

- ☒ High Impact
- ☒ Medium Impact
- ☐ Low or Unknown Impact

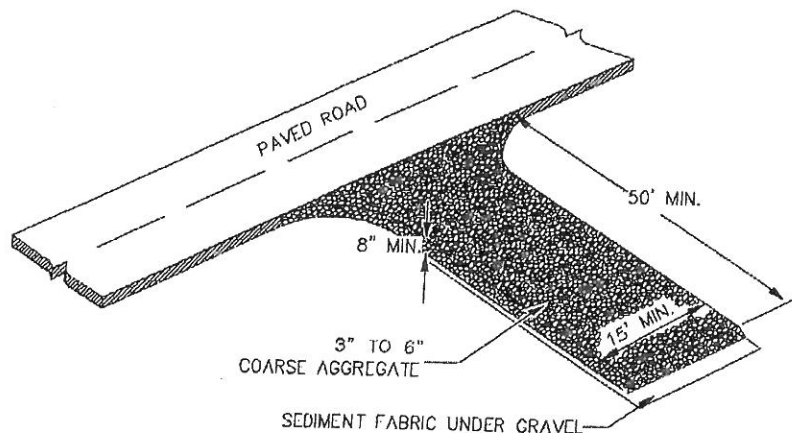
### IMPLEMENTATION REQUIREMENTS

- ☒ Capital Costs
- ☐ O&M Costs
- ☒ Maintenance
- ☐ Training

- ☒ High ☒ Medium ☐ Low



## 917 BMP: Stabilized Construction Entrance



### OBJECTIVES

- ☒ Housekeeping Practices
- ☐ Contain Waste
- ☐ Minimize Disturbed Areas
- ☐ Stabilize Disturbed Areas
- ☐ Protect Slopes/Channels
- ☒ Control Site Perimeter
- ☐ Control Internal Erosion



### DESCRIPTION:

A stabilized pad of crushed stone located where construction traffic enters or leaves the site from or to paved surface.

### APPLICATIONS:

At any point of ingress or egress at a construction site where adjacent traveled way is paved. Generally applies to sites over 2 acres unless special conditions exist.

### INSTALLATION/APPLICATION CRITERIA:

- Clear and grub area and grade to provide maximum slope of 2%.
- Compact subgrade and place filter fabric if desired (recommended for entrances to remain for more than 3 months).
- Place coarse aggregate, 3-6" size, to a minimum depth of 8 inches.

### LIMITATIONS:

- Requires periodic top dressing with additional stones.
- Should be used in conjunction with street sweeping on adjacent public right-of-way.

### MAINTENANCE:

- Inspect daily for loss of gravel or sediment buildup.
- Inspect adjacent roadway for sediment deposit and clean by sweeping or shoveling.
- Repair entrance and replace gravel as required to maintain control in good working condition.
- Expand stabilized area as required to accommodate traffic and prevent erosion at driveways

### TARGETED POLLUTANTS

- ☒ Sediment
- ☐ Nutrients
- ☐ Toxic Materials
- ☐ Oil & Grease
- ☐ Floatable Materials
- ☐ Other Waste

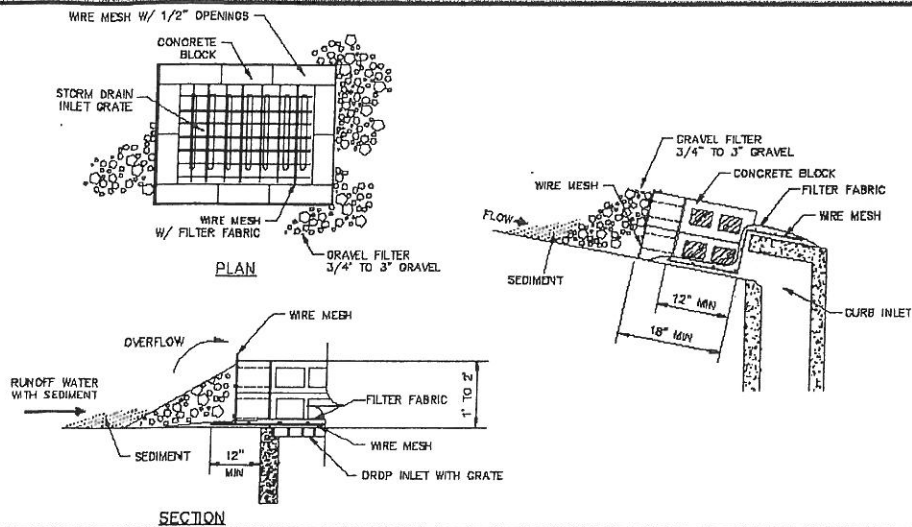
- ☒ High Impact
- ☒ Medium Impact
- ☐ Low or Unknown Impact

### IMPLEMENTATION REQUIREMENTS

- ☒ Capital Costs
- ☒ O&M Costs
- ☒ Maintenance
- ☐ Training

- ☒ High ☒ Medium ☐ Low

## 918A BMP: Inlet Protection - Concrete Block



### OBJECTIVES

- ☐ Housekeeping Practices
- ☐ Contain Waste
- ☐ Minimize Disturbed Areas
- ☐ Stabilize Disturbed Areas
- ☐ Protect Slopes/Channels
- ☒ Control Site Perimeter
- ☒ Control Internal Erosion



### DESCRIPTION:

Concrete block and gravel filter placed over inlet to storm drain system.

### APPLICATION:

Construct at inlets in paved or unpaved areas where upgradient area is to be disturbed by construction activities.

### INSTALLATION/APPLICATION CRITERIA:

- Place wire mesh (with 1/2 inch openings) over the inlet grate extending one foot past the grate in all directions.
- Place concrete blocks around the inlet with openings facing outward. Stack blocks to minimum height of 12-inches and maximum height of 24-inches.
- Place wire mesh around outside of blocks.
- Place gravel (3/4" to 3") around blocks.

### LIMITATIONS:

- Recommended for maximum drainage area of one acre.
- Excess flows may bypass the inlet requiring down gradient controls.
- Ponding will occur at inlet.

### MAINTENANCE:

- Inspect inlet protection after every large storm event and at a minimum of once monthly.
- Remove sediment accumulated when it reaches 4-inches in depth.
- Replace filter fabric and clean or replace gravel if clogging is apparent.

### TARGETED POLLUTANTS

- ☒ Sediment
- ☐ Nutrients
- ☐ Toxic Materials
- ☐ Oil & Grease
- ☒ Floatable Materials
- ☐ Other Waste

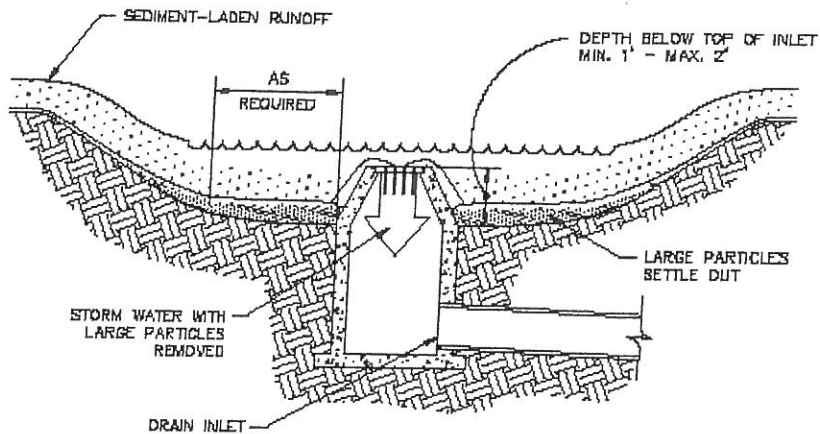
- ☒ High Impact
  - ☒ Medium Impact
  - ☐ Low or Unknown Impact

### IMPLEMENTATION REQUIREMENTS

- ☒ Capital Costs
- ☐ O&M Costs
- ☒ Maintenance
- ☐ Training

☒ High ☒ Medium ☐ Low

## 918B BMP: Inlet Protection - Excavated



### OBJECTIVES

- ☐ Housekeeping Practices
- ☐ Contain Waste
- ☐ Minimize Disturbed Areas
- ☐ Stabilize Disturbed Areas
- ☐ Protect Slopes/Channels
- ☒ Control Site Perimeter
- ☒ Control Internal Erosion



### DESCRIPTION:

An area excavated around a storm drain inlet to impound water below the inlet.

### APPLICATION:

Construct at storm drainage inlets located downgradient of areas to be disturbed by construction (for inlets in paved areas see other information sheets for inlet protection).

### INSTALLATION/APPLICATION CRITERIA:

- Provide upgradient sediment controls, such as silt fence during construction of inlet.
- When construction of inlet is complete, excavate adjacent area 1 to 2 feet lower than the grate elevation. Size of excavated area should be based on soil type and contributing acreage.

### LIMITATIONS:

- Recommended maximum contributing drainage area of one acre.
- Limited to inlets located in open unpaved areas.
- Requires flat area adjacent to inlet.

### MAINTENANCE:

- Inspect inlet protection following storm event and at a minimum of once monthly.
- Remove accumulated sediment when it reaches one half of the excavated sump below the grate.
- Repair side slopes as required.

### TARGETED POLLUTANTS

- ☒ Sediment
- ☐ Nutrients
- ☒ Toxic Materials
- ☐ Oil & Grease
- ☒ Floatable Materials
- ☐ Other Waste

- ☒ High Impact
- ☒ Medium Impact
- ☐ Low or Unknown Impact

### IMPLEMENTATION REQUIREMENTS

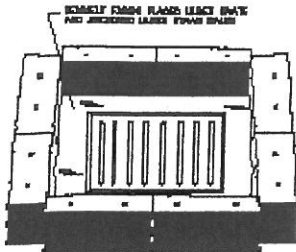
- ☐ Capital Costs
- ☐ O&M Costs
- ☒ Maintenance
- ☐ Training

- ☒ High ☒ Medium ☐ Low

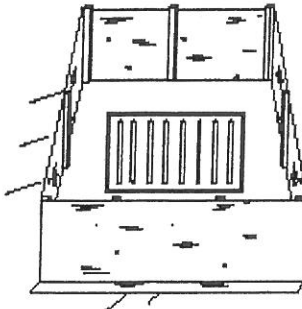


## 918C BMP: Inlet Protection - Silt Fence or Straw Bale

### INLET PROTECTION



STRAW BALE BARRIER



SILT FENCE

SEE INDIVIDUAL BMP INFORMATION SHEETS FOR INSTRUCTIONS FOR CONSTRUCTION OF STRAW BALE BARRIER AND SILT FENCE..

### OBJECTIVES

- ☐ Housekeeping Practices
- ☐ Contain Waste
- ☐ Minimize Disturbed Areas
- ☐ Stabilize Disturbed Areas
- ☐ Protect Slopes/Channels
- ☒ Control Site Perimeter
- ☒ Control Internal Erosion



### DESCRIPTION:

Sediment barrier erected around storm drain inlet.

### APPLICATION:

Construct at storm drainage inlets located downgradient of areas to be disturbed by construction (for inlets in paved areas see other information sheets for inlet protection).

### INSTALLATION/APPLICATION CRITERIA:

- Provide upgradient sediment controls, such as silt fence during construction of inlet.
- When construction of inlet is complete, erect straw bale barrier or silt fence surrounding perimeter of inlet. Follow instructions and guidelines on individual
- BMP information sheets for straw bale barrier and silt fence construction.

### LIMITATIONS:

- Recommended maximum contributing drainage area of one acre.
- Limited to inlets located in open unpaved areas.
- Requires shallow slopes adjacent to inlet.

### MAINTENANCE:

- Inspect inlet protection following storm event and at a minimum of once monthly.
- Remove accumulated sediment when it reaches 4-inches in depth.
- Repair or realign barrier/fence as needed.
- Look for bypassing or undercutting and recompact soil around barrier/fence as required.

### TARGETED POLLUTANTS

- ☒ Sediment
- ☐ Nutrients
- ☐ Toxic Materials
- ☐ Oil & Grease
- ☒ Floatable Materials
- ☐ Other Waste

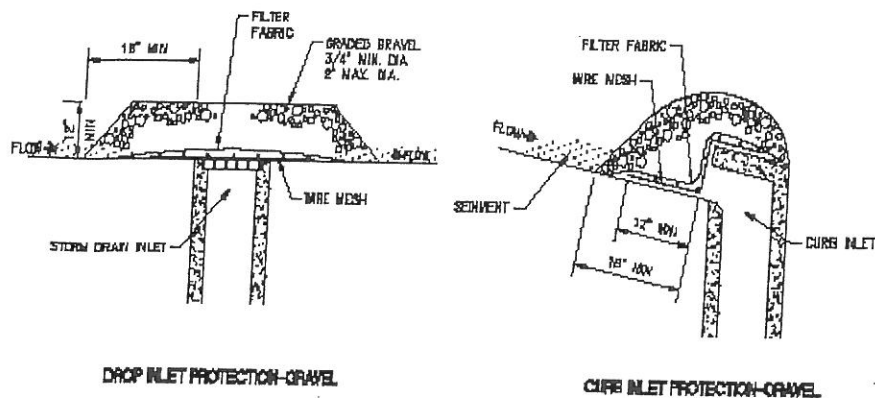
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- ☒ Medium Impact
- ☐ Low or Unknown Impact

### IMPLEMENTATION REQUIREMENTS

- ☒ Capital Costs
- ☐ O&M Costs
- ☒ Maintenance
- ☐ Training

- ☒ High ☒ Medium ☐ Low

## 918D BMP: Inlet Protection - Gravel



### OBJECTIVES

- ☐ Housekeeping Practices
- ☐ Contain Waste
- ☐ Minimize Disturbed Areas
- ☐ Stabilize Disturbed Areas
- ☐ Protect Slopes/Channels
- ☒ Control Site Perimeter
- ☒ Control Internal Erosion

### DESCRIPTION:

Placement of gravel filter over inlet to storm drain to filter storm water runoff.

### APPLICATION:

Construct at inlets in paved or unpaved areas where upgradient area is to be disturbed by construction activities.

### INSTALLATION/APPLICATION CRITERIA:

- Place wire mesh (with 1/2 inch openings) over the inlet grate extending one foot past the grate in all directions.
- Place filter fabric over the mesh. Filter fabric should be selected based on soil type.
- Place graded gravel, to a minimum depth of 12-inches, over the filter fabric and extending 18-inches past the grate in all directions.

### LIMITATIONS:

Recommended for maximum drainage area of one acre.

Excess flows may bypass the inlet requiring down gradient controls.

Ponding will occur at inlet.

### MAINTENANCE:

Inspect inlet protection after every large storm event and at a minimum of once monthly.

Remove sediment accumulated when it reaches 4-inches in depth.

Replace filter fabric and clean or replace gravel if clogging is apparent.



### TARGETED POLLUTANTS

- ☒ Sediment
- ☐ Nutrients
- ☐ Toxic Materials
- ☐ Oil & Grease
- ☒ Floatable Materials
- ☐ Other Waste

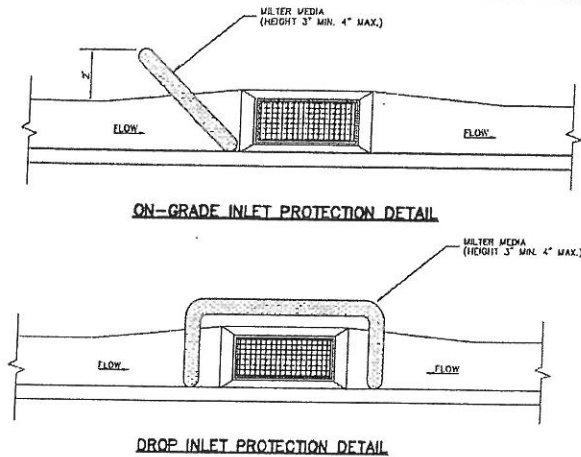
- ☒ High Impact
- ☒ Medium Impact
- ☐ Low or Unknown Impact

### IMPLEMENTATION REQUIREMENTS

- ☒ Capital Costs
- ☐ O&M Costs
- ☒ Maintenance
- ☐ Training

- ☒ High Impact
- ☒ Medium Impact
- ☐ Low or Unknown Impact
- ☒ High ☒ Medium ☐ Low

## 918E BMP: Inlet Protection - Wattle



### OBJECTIVES

- ☒ Housekeeping Practices
- ☐ Contain Waste
- ☐ Minimize Disturbed Areas
- ☐ Stabilize Disturbed Areas
- ☐ Protect Slopes/Channels
- ☒ Control Site Perimeter
- ☒ Control Internal Erosion



### DESCRIPTION:

Sediment barrier erected around storm drain inlet.

### APPLICATION:

Construct at storm drainage inlets located down-gradient of areas to be disturbed by construction.

### INSTALLATION/APPLICATION CRITERIA:

- Provide up-gradient sediment controls, such as silt fencing during construction of inlet.
- When construction of curb and gutter and roadway is complete, install gravel filled bags or similar material around perimeter of inlet for drop inlets and at a 45° angle upstream for an on-grade inlet.

### LIMITATIONS:

Recommended for maximum drainage area of one acre.  
 Required shallow slopes adjacent to inlet.  
 Excess flows may bypass the inlet requiring down gradient controls.  
 Ponding will occur at inlet.

### MAINTENANCE:

Inspect inlet protection after every large storm event and at a minimum of once every 2 weeks.  
 Remove sediment accumulated when it reaches 4-inches in depth.  
 Look for bypassing or undercutting and repair or realign as needed.

### TARGETED POLLUTANTS

- ☒ Sediment
- ☐ Nutrients
- ☐ Toxic Materials
- ☐ Oil & Grease
- ☒ Floatable Materials
- ☐ Other Waste

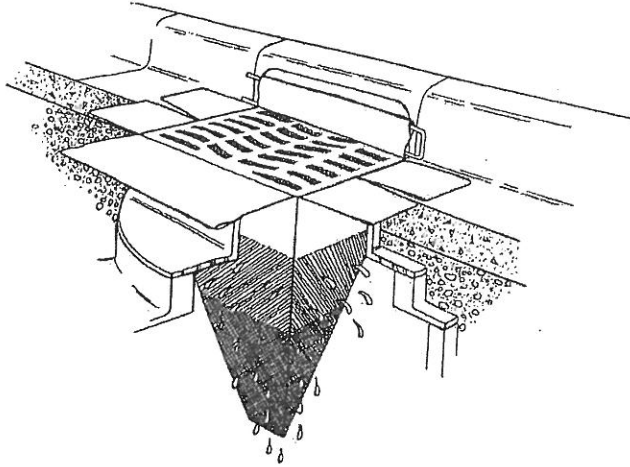
- ☒ High Impact
- ☒ Medium Impact
- ☐ Low or Unknown Impact

### IMPLEMENTATION REQUIREMENTS

- ☒ Capital Costs
- ☐ O&M Costs
- ☒ Maintenance
- ☐ Training

- ☒ High Impact
- ☒ Medium Impact
- ☐ Low or Unknown Impact
- ☒ High ☒ Medium ☐ Low

## 918F BMP: Inlet Protection – Silt Bags



### DESCRIPTION:

Collect and trap sediment and debris entering catch basins from either grated or curb inlets. Insert is made of fabric and is placed in the drain inlet around the perimeter of the grate. Runoff passes through the bag before discharging into the drain outlet pipe. Overflow holes are usually provided to pass larger flows without causing a backwater at the grate. Certain manufactured products include polymers intended to increase pollutant removal effectiveness.

### APPLICATION:

- Storm drain inlet boxes

### INSTALLATION/APPLICATION CRITERIA:

- Regular Maintenance is necessary
- Evaluation of the device chosen should be balanced with cost
- Hydraulic capacity controls effectiveness
- Most useful in small drainage areas (<1Acre)
- Ideal in combination with other BMP's

### LIMITATIONS:

- Cost
- Maintenance required to prevent plugging and remain effective

### MAINTENANCE:

Inspection after all storm events and as required between events

### OBJECTIVES

- ☒ Housekeeping Practices
- ☐ Contain Waste
- ☐ Minimize Disturbed Areas
- ☐ Stabilize Disturbed Areas
- ☐ Protect Slopes/Channels
- ☐ Control Site Perimeter
- ☐ Control Internal Erosion



### TARGETED POLLUTANTS

- Sediment
- ☐ Nutrients
- ☐ Toxic Materials
- ☐ Oil & Grease
- Floatable Materials
- ☐ Other Waste

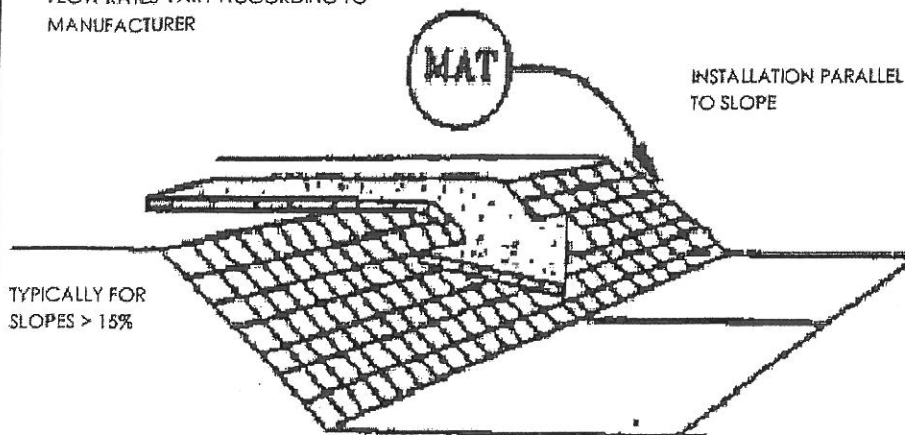
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### IMPLEMENTATION REQUIREMENTS

- ☒ Capital Costs
- ☒ O&M Costs
- Maintenance
- ☒ Training
- High Impact
- ☒ Medium Impact
- ☐ Low or Unknown Impact
- High ☒ Medium ☐ Low

## 920 BMP: Geotextiles and Mats

FLOW RATES VARY ACCORDING TO  
MANUFACTURER



### DESCRIPTION:

Matings made of natural or synthetic material which are used to temporarily or permanently stabilize soil.

### APPLICATION:

- Typically suited for post-construction site stabilization, but may be used for temporary stabilization of highly erosive soils.
- Channels and streams.
- Steep slopes.

### INSTALLATION/APPLICATION CRITERIA:

- Matings may be applied to disturbed soils and where existing vegetation has been removed.
- The following organic matting materials provide temporary protection until permanent vegetation is established, or when seasonal circumstances dictate the need for temporary stabilization until weather or construction delays are resolved: Jute matings and straw matings.
- The following synthetic matings may be used for either temporary or postconstruction stabilization, both with and without vegetation: excelsior matting, glass fiber matting, mulch matting.
- Staples are needed to anchor the matting.

### LIMITATIONS:

- Matings are more costly than other BMP practices, limiting their use to areas where other BMPs are ineffective (e.g., channels, steep slopes).
- May delay seed germination, due to reduction in soil temperature.
- Installation requires experienced contractor to ensure soil stabilization and erosion protection.

### MAINTENANCE:

- Inspect monthly and after significant rainfall.
- Re-anchor loosened matting and replace missing matting and staples as required.

### OBJECTIVES

- ☐ Housekeeping Practices
- ☐ Contain Waste
- ☐ Minimize Disturbed Areas
- ☒ Stabilize Disturbed Areas
- ☒ Protect Slopes/Channels
- ☐ Control Site Perimeter
- ☒ Control Internal Erosion



### TARGETED POLLUTANTS

- ☒ Sediment
- ☐ Nutrients
- ☐ Toxic Materials
- ☐ Oil & Grease
- ☐ Floatable Materials
- ☐ Other Waste

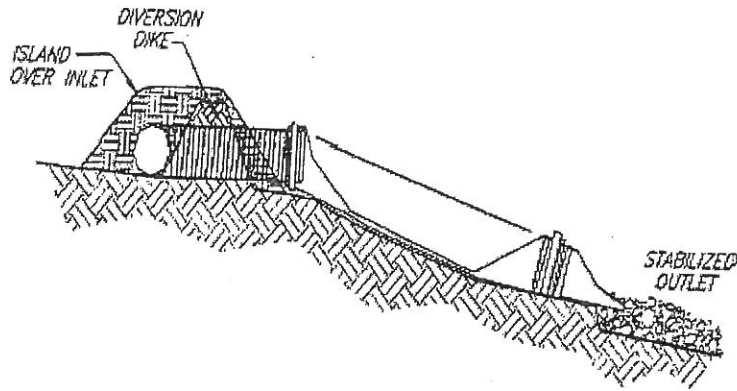
- ☒ High Impact
- ☒ Medium Impact
- ☐ Low or Unknown Impact

### IMPLEMENTATION REQUIREMENTS

- ☒ Capital Costs
- ☒ O&M Costs
- ☒ Maintenance
- ☐ Training

- ☒ High ☒ Medium ☐ Low

## 922A BMP: Slope Drain



### DESCRIPTION:

A temporary pipe or lined channel that drains the top of a slope to a stable discharge point at the bottom of a slope without causing erosion.

### APPLICATIONS:

- Where concentrated flow of surface runoff must be conveyed down a slope in order to prevent erosion.
- Drainage for top slope diversion dikes or swales.
- Emergency spillway for a sediment basin.
- Drainage for top of cut/fill slopes where water can accumulate.

### INSTALLATION/APPLICATION CRITERIA:

- Secure inlet and surround with dikes to prevent gully erosion, and anchor pipe to slope.
- Size to convey at least the peak of a 10-year, storm event.
- Stabilize outlet. (See Outlet Protection BMP).

### LIMITATIONS:

- Maximum drainage area per slope drain is 5 acres.
- Clogged slope drains will force water around the pipe and cause slope erosion.
- Dissipation of high flow velocities at the pipe outlet is required to avoid downstream erosion.
- Failure can result in flooding and severe erosion.

### MAINTENANCE:

- Structure must be inspected weekly and after storms.
- Inlet must be free of undercutting and no water should circumvent the entry.
- Outlet should not produce erosion; velocity dissipators must be maintained.
- Pipe anchors must be checked to ensure that the pipe remains anchored to the slope.

### OBJECTIVES

- ☐ Housekeeping Practices
- ☐ Contain Waste
- ☐ Minimize Disturbed Areas
- ☐ Stabilize Disturbed Areas
- ☒ Protect Slopes/Channels
- ☐ Control Site Perimeter
- ☒ Control Internal Erosion



### TARGETED POLLUTANTS

- ☒ Sediment
- ☐ Nutrients
- ☐ Toxic Materials
- ☐ Oil & Grease
- ☐ Floatable Materials
- ☐ Other Waste

- |  |
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### IMPLEMENTATION REQUIREMENTS

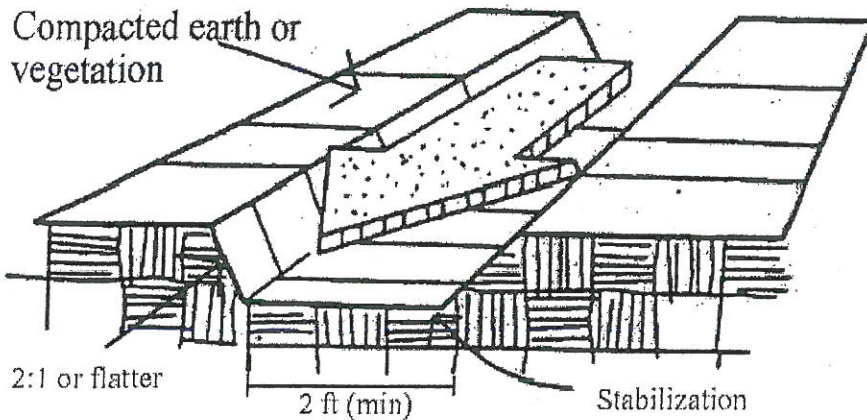
- ☒ Capital Costs
- ☐ O&M Costs
- ☒ Maintenance
- ☐ Training

- ☒ High Impact
- ☒ Medium Impact
- ☐ Low or Unknown Impact
- ☒ High ☒ Medium ☐ Low



## 922B BMP: Temporary Drains and Swales

Compacted earth or vegetation



2:1 or flatter

2 ft (min)

Stabilization

### OBJECTIVES

- ☐ Housekeeping Practices
- ☐ Contain Waste
- ☐ Minimize Disturbed Areas
- ☐ Stabilize Disturbed Areas
- ☒ Protect Slopes/Channels
- ☒ Control Site Perimeter
- ☒ Control Internal Erosion



### DESCRIPTION:

Temporary drains and swales are used to divert off-site runoff around the construction site, divert runoff from stabilized areas around disturbed areas, and direct runoff into sediment.

### APPLICATIONS:

- Temporary drains and swales are appropriate for diverting any upslope runoff around unstabilized or disturbed areas of the construction site.
- Prevent slope failures. Prevent damage to adjacent property. Prevents erosion and transport of sediments into waterways. Increases the potential for infiltration. Diverts sediment-laden runoff into sediment basins or traps.

### INSTALLATION/APPLICATION:

- Temporary drainage swales will effectively convey runoff and avoid erosion if built properly.
- Size temporary drainage swales using local drainage design criteria. A permanent drainage channel must be designed by a professional engineer (see the local drainage design criteria for proper design).
- At a minimum, the drain/swale should conform to predevelopment drainage patterns and capacities.
- Construct the drain/swale with an uninterrupted, positive grade to a stabilized outlet. Provide erosion protection or energy dissipation measures if the flow out of the drain or swale can reach an erosive velocity.

### LIMITATIONS:

- Temporary drains and swales or any other diversion of runoff should not adversely impact upstream or downstream properties.
- Temporary drains and swales must conform to local floodplain management requirements.

### MAINTENANCE:

- Inspect weekly and after each rain.
- Repair any erosion immediately.
- Remove sediment which builds up in the swale and restricts its flow capacity.

### TARGETED POLLUTANTS

- ☒ Sediment
- ☐ Nutrients
- ☐ Toxic Materials
- ☐ Oil & Grease
- ☐ Floatable Materials
- ☐ Other Waste

- ☒ High Impact
- ☒ Medium Impact
- ☐ Low or Unknown Impact

### IMPLEMENTATION REQUIREMENTS

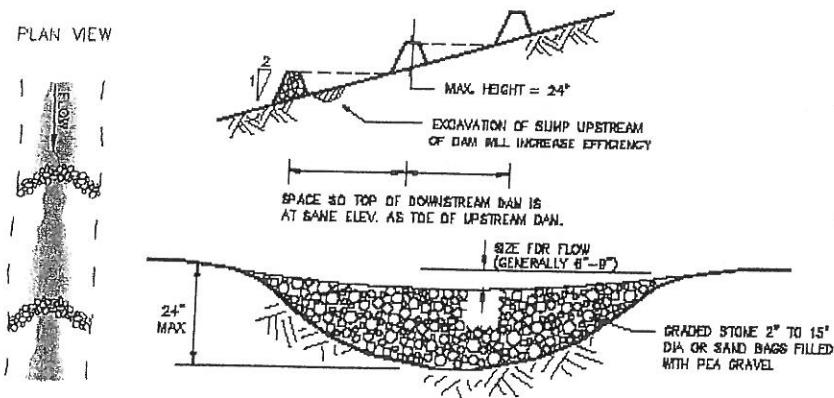
- ☒ Capital Costs
- ☐ O&M Costs
- ☐ Maintenance
- ☐ Training

- ☒ High ☒ Medium ☐ Low



## 924 BMP: Rock Check Dams

PLAN VIEW



### DESCRIPTION:

A small, temporary dam constructed across a drainage ditch to reduce velocity of concentrated stormwater flows, thereby reducing the erosion of the ditch.

### APPLICATION:

- Temporary drainage paths
- Permanent drainage ways not yet stabilized
- Existing drainage paths receiving increased flows due to construction

### INSTALLATION/APPLICATION CRITERIA:

- Prepare location of dam by removing any debris and rough grading any irregularities in channel bottom
- Place rocks by hand or with appropriate machinery, do not dump
- Construct dam with center lower to pass design flow
- Construct 50% side slopes on dam

### LIMITATIONS:

- Maximum recommended drainage area is 10 acres
- Maximum recommended height is 24"
- Do not use in running stream

### MAINTENANCE:

- Inspect dams daily during prolonged rainfall, after each major rain event and at a minimum of once monthly.
- Remove any large debris and repair any damage to dam, channel or sideslopes.
- Remove accumulated sediment when it reaches one half the height of the dam.

### OBJECTIVES

- ☐ Housekeeping Practices
- ☐ Contain Waste
- ☐ Minimize Disturbed Areas
- ☒ Stabilize Disturbed Areas
- ☒ Protect Slopes/Channels
- ☐ Control Site Perimeter
- ☐ Control Internal Erosion



### TARGETED POLLUTANTS

- ☒ Sediment
- ☐ Nutrients
- ☐ Toxic Materials
- ☐ Oil & Grease
- ☐ Floatable Materials
- ☐ Other Waste

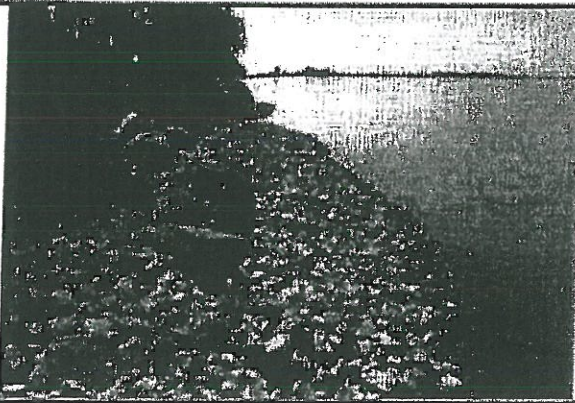
- ☒ High Impact
- ☒ Medium Impact
- ☐ Low or Unknown Impact

### IMPLEMENTATION REQUIREMENTS

- ☒ Capital Costs
- ☐ O&M Costs
- ☒ Maintenance
- ☐ Training

- ☒ High ☒ Medium ☐ Low

## 927A BMP: Riprap



### DESCRIPTION:

Riprap is a permanent, erosion-resistant protective layer made of loose stones. It is intended to protect soil from erosion in areas of concentrated runoff. Riprap may also be used to stabilize slopes that are unstable because of seepage problems.

### APPLICATION:

- Riprap is normally used at locations where erosive forces from water flow exceed the ability of the soil or vegetative cover to resist those forces.
- Riprap can be used for pipe outlet protection, channel lining, scour protection, etc.
- Riprap is commonly used for wave protection on lakes.

### INSTALLATION/APPLICATION CRITERIA:

- For slopes steeper than 2:1, consider using materials other than riprap for erosion protection.
- If riprap is being planned for the bottom of a permanently flowing channel, the bottom can be modified to enhance fish habitat. This can be done by constructing riffles and pools which simulate natural conditions.
- When working within flowing streams, measures should be taken to prevent excessive turbidity and erosion during construction. Bypassing base flows or temporarily blocking base flows are two possible methods. Work should be done during a period of low flow. In designing riprap consider the following:
  - Use durable rock, such as granite, and a variety of rock sizes.
  - The thickness of riprap layers should be at least 1.25 times the maximum stone diameter.
  - Filter material is usually required between riprap and the underlying soil surface.

### LIMITATIONS:

- Riprap may be unstable on very steep slopes.
- The placement of a riprap in streams requires a state stream alteration permit.

### MAINTENANCE:

- Riprap should be inspected annually and after major storms.
- If riprap has been damaged, repairs should be made promptly to prevent a progressive failure.
- If repairs are needed repeatedly at one location, the site should be evaluated to see if original design conditions have changed.

### CONSIDERATIONS

- ☒ Soils
- ☒ Area Required
- ☒ Slope
- ☐ Water Availability
- ☒ Aesthetics
- ☐ Hydraulic Head
- ☒ Environmental Side Effects



### TARGETED POLLUTANTS

- ☒ Sediment
- ☐ Nutrients
- ☐ Heavy Metals
- ☐ Toxic Materials
- ☐ Oxygen Demanding Substances
- ☐ Oil & Grease
- ☐ Floatable Materials
- ☐ Bacteria & Viruses

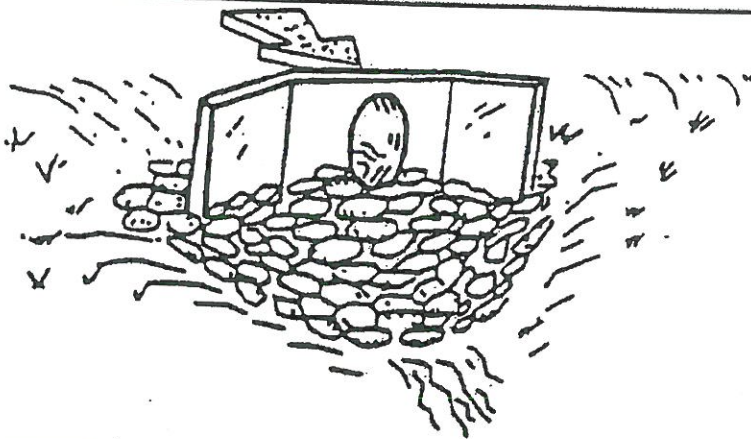
- ☐ High Impact
- ☒ Medium Impact
- ☐ Low or Unknown Impact

### IMPLEMENTATION REQUIREMENTS

- ☒ Capital Costs
- ☒ O&M Costs
- ☒ Maintenance
- ☐ Training

- ☐ High ☒ Medium ☐ Low

## 927B BMP: Outlet Protection



### DESCRIPTION:

A rock outlet protection is a physical device composed of rock, or grouted riprap which is placed at the outlet of a pipe to prevent scour of the soil caused by high pipe flow velocities, and to absorb flow energy to produce nonerosive velocities.

### APPLICATION:

- Wherever discharge velocities and energies at the outlet culverts, conduits, or channels are sufficient to erode the next downstream reach
- Rock outlet protection is best suited for temporary use during construction because it is usually less expensive and easier to install than concrete aprons or energy dissipators
- A sediment trap below the pipe outlet is recommended if runoff is sediment laden
- Permanent rock riprap protection should be designed and sized by the engineer as part of the culvert, conduit or channel design
- Grouted riprap should be avoided in areas of freeze and thaw because the grout will break up

### INSTALLATION/APPLICATION CRITERIA:

- Rock outlet protection is effective when the rock is sized and placed properly. When this is accomplished, rock outlets do much to limit erosion at pipe outlets. Rock size should be increased for high velocity flows. Best results are obtained when sound, durable, angular rock is used.

### LIMITATIONS:

- Large storms often wash away the rock outlet protection and leave the area susceptible to erosion
- Sediment captured by the rock outlet protection may be difficult to remove without removing the rock
- Outlet protection may negatively impact channel habitat

### MAINTENANCE:

- Inspect after each significant rain for erosion and/or disruption of the rock, and repair immediately
- Grouted or wire-tied rock riprap can minimize maintenance requirements

### OBJECTIVES

- ☐ Housekeeping Practices
- ☐ Contain Waste
- ☐ Minimize Disturbed Areas
- ☐ Stabilize Disturbed Areas
- ☒ Protect Slopes/Channels
- ☐ Control Site Perimeter
- ☒ Control Internal Erosion



### TARGETED POLLUTANTS

- ☒ Sediment
- ☐ Nutrients
- ☐ Heavy Metals
- ☐ Toxic Materials
- ☐ Oil & Grease
- ☐ Floatable Materials
- ☐ Bacteria & Viruses
- ☐ Other Waste

- ☒ High Impact
- ☒ Medium Impact
- ☐ Low or Unknown Impact

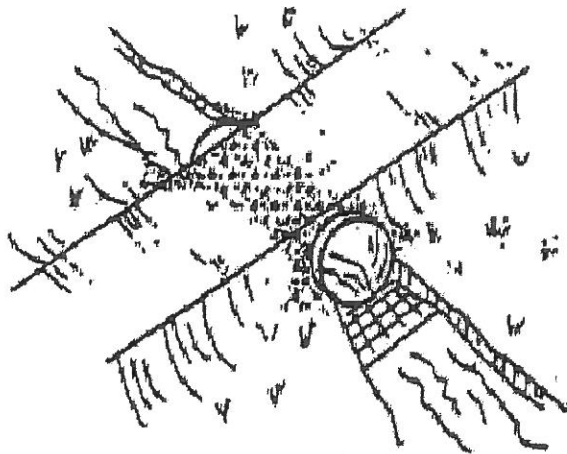
### IMPLEMENTATION REQUIREMENTS

- ☒ Capital Costs
- ☒ O&M Costs
- ☒ Maintenance
- ☐ Training

- ☒ High ☒ Medium ☐ Low



## 928 BMP: Temporary Stream Crossing



### DESCRIPTION:

A temporary access stream crossing is a temporary culvert, ford or bridge placed across a waterway to provide access for construction purposes for a period of less than one year. Temporary access crossings are not intended to be used to maintain traffic for the general public.

### APPLICATIONS:

Temporary stream crossings should be installed at all designated crossings of perennial and intermittent streams on the construction site, as well as for dry channels which may be significantly eroded by construction traffic.

### INSTALLATION/APPLICATION:

Requires knowledge of stream flows and soil strength and should be designed under the direction of a Utah registered engineer with knowledge of both hydraulics and construction loading requirements for structures.

### LIMITATIONS:

- May be an expensive for a temporary improvement.
- Requires other BMPs to minimize soil disturbance during installation and removal.
- Fords should only be used in dry weather.
- A Stream Alteration Permit may be required, contact the Utah Division of Water Rights before implementation.

### MAINTENANCE:

- Inspect weekly and after each significant rainfall, including assessment of foundations.
- Periodically remove silt from crossings.
- Replace lost aggregated from inlets and outlets of culverts.

### OBJECTIVES

- ☒ Housekeeping Practices
- ☐ Contain Waste
- ☒ Minimize Disturbed Areas
- ☒ Stabilize Disturbed Areas
- ☒ Protect Slopes/Channels
- ☐ Control Site Perimeter
- ☐ Control Internal Erosion



### TARGETED POLLUTANTS

- ☒ Sediment
- ☐ Nutrients
- ☐ Toxic Materials
- ☒ Oil & Grease
- ☐ Floatable Materials
- ☐ Other Waste

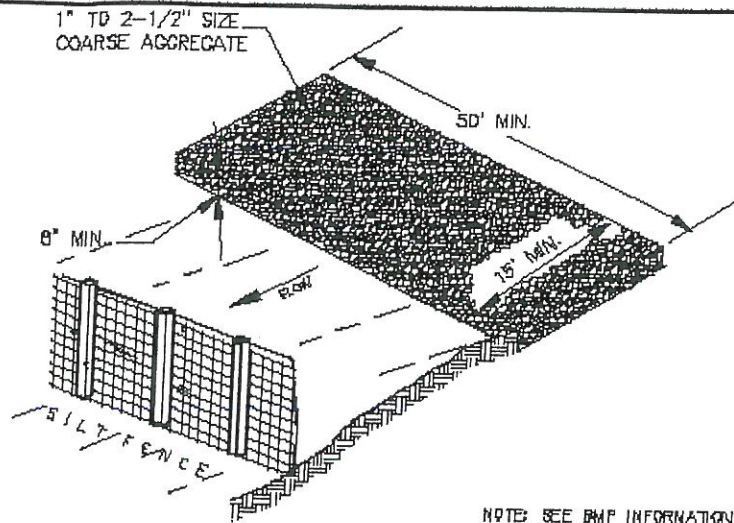
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### IMPLEMENTATION REQUIREMENTS

- ☒ Capital Costs
- ☐ O&M Costs
- ☒ Maintenance
- ☐ Training

- |  |
|--|
| <input checked="" type="checkbox"/> High <input checked="" type="checkbox"/> Medium <input type="checkbox"/> Low |
|--|

## 931A BMP: Equipment and Vehicle Wash Down Area



NOTE: SEE BMP INFORMATION SHEET FOR SILT FENCE CONSTRUCTION

### OBJECTIVES

- ☒ Housekeeping Practices
- ☐ Contain Waste
- ☐ Minimize Disturbed Areas
- ☐ Stabilize Disturbed Areas
- ☐ Protect Slopes/Channels
- ☐ Control Site Perimeter
- ☒ Control Internal Erosion



### DESCRIPTION:

A stabilized pad of crushed stone for general washing of equipment and construction vehicles.

### APPLICATION:

At any site where regular washing of vehicles and equipment will occur. May also be used as a filling point for water trucks limiting erosion caused by overflow or spillage of water.

### INSTALLATION/APPLICATION CRITERIA:

- Clear and grub area and grade to provide maximum slope of 1%
- Compact subgrade and place filter fabric if desired (recommended for wash areas to remain in use for more than 3 months).
- Place coarse aggregate, 1 to 2-1/2 inches in size, to a minimum depth of 8- inches.
- Install silt fence downgradient (see silt fence BMP information sheet).

### LIMITATIONS:

Cannot be utilized for washing equipment or vehicles that may cause contamination of runoff such as fertilizer equipment or concrete equipment. Solely used to control sediment in wash water.

### MAINTENANCE:

- Inspect daily for loss of gravel or sediment buildup.
- Inspect adjacent area for sediment deposit and install additional controls as necessary.
- Repair area and replace gravel as required to maintain control in good working condition.
- Expand stabilized area as required to accommodate activities.
- Maintain silt fence as outlined in specific silt fence BMP information sheet.

### TARGETED POLLUTANTS

- ☒ Sediment
- ☐ Nutrients
- ☒ Toxic Materials
- ☒ Oil & Grease
- ☐ Floatable Materials
- ☐ Other Waste

- ☒ High Impact
- ☒ Medium Impact
- ☐ Low or Unknown Impact

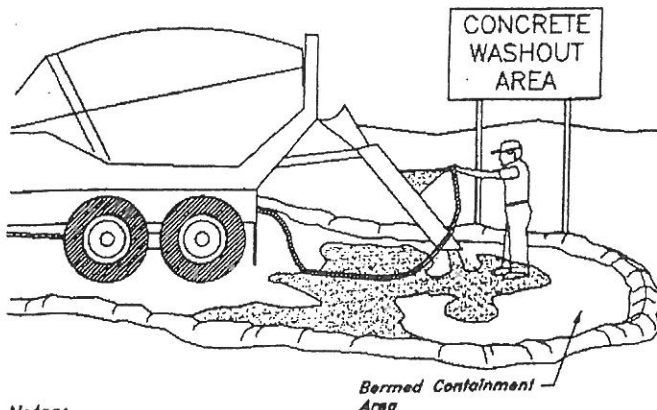
### IMPLEMENTATION REQUIREMENTS

- ☒ Capital Costs
- ☐ O&M Costs
- ☒ Maintenance
- ☐ Training

- ☒ High ☒ Medium ☐ Low

## 931B BMP: Concrete Waste Management

(b)



### OBJECTIVES

- ☐ Housekeeping Practices
- ☒ Contain Waste
- ☐ Minimize Disturbed Areas
- ☐ Stabilize Disturbed Areas
- ☐ Protect Slopes/Channels
- ☐ Control Site Perimeter
- ☐ Control Internal Erosion



### DESCRIPTION:

Prevent or reduce the discharge of pollutants to storm water from concrete waste by conducting washout off-site, performing on-site washout in a designated area, and training employees and subcontractors.

### APPLICATION:

This technique is applicable to all types of sites

### INSTALLATION/APPLICATION CRITERIA:

- Store dry materials under cover, away from drainage areas.
- Minimize excess mixing of fresh concrete, mortar or cement on-site.
- Perform washout of concrete trucks off-site or in designated areas only.
- Do not wash out concrete trucks into storm drains, open ditches, streets, or streams.
- Do not allow excess concrete to be dumped on-site, except in designated areas.
- When washing concrete to remove fine particles and expose the aggregate, avoid creating runoff by draining the water within a bermed or level area
- Train employees and subcontractors in proper concrete management.
- No spraying off of trucks in the street; windshield, wheels, outside of drum, etc.

### LIMITATIONS:

Off-site washout of concrete wastes may not always be possible.

### MAINTENANCE:

- Inspect subcontractors to ensure that concrete wastes are being properly managed.
- If using a temporary pit, dispose of hardened concrete on a regular basis.

### TARGETED POLLUTANTS

- ☐ Sediment
- ☐ Nutrients
- ☐ Toxic Materials
- ☐ Oil & Grease
- ☐ Floatable Materials
- ☒ Other Waste

- ☒ High Impact
- ☒ Medium Impact
- ☐ Low or Unknown Impact

### IMPLEMENTATION REQUIREMENTS

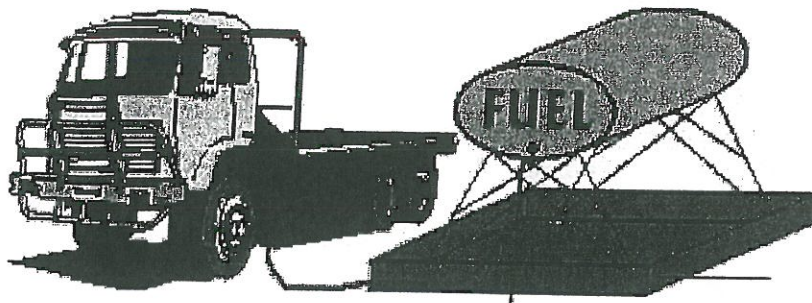
- ☐ Capital Costs
- ☐ O&M Costs
- ☒ Maintenance
- ☒ Training

- ☒ High ☒ Medium ☐ Low



## 931C BMP: Vehicle and Equipment Fueling

MUST BE CAPABLE OF HOLDING 100% OF TANK CAPACITY



SLOPED OR OTHERWISE DESIGNED FOR EASY REMOVAL OF LEAKED FUEL

### OBJECTIVES

- ☒ Housekeeping Practices
- ☐ Contain Waste
- ☐ Minimize Disturbed Areas
- ☐ Stabilize Disturbed Areas
- ☐ Protect Slopes/Channels
- ☐ Control Site Perimeter
- ☐ Control Internal Erosion



### DESCRIPTION:

Prevent fuel spills and leaks, and reduce their impacts to storm water by using off-site facilities, fueling in designated areas only, enclosing or covering stored fuel, implementing spill controls, and training employees and subcontractors.

### INSTALLATION/APPLICATION CRITERIA:

- Use off-site fueling as much as possible. Fueling vehicles and equipment outdoors or in areas where fuel may spill/leak onto paved surfaces or into drainage pathways can pollute storm water. If you fuel a large number of vehicles or pieces of equipment, consider using an off-site fueling station. These businesses are better equipped to handle fuel and spills properly. Performing this work off-site can also be economical by eliminating the need for a separate fueling area at your site.
- If fueling must occur on-site, use designated areas, located away from drainage courses, to prevent the runoff of storm water and the runoff of spills. Discourage "topping-off" of fuel tanks.
- Always use secondary containment, such as a drain pan or drop cloth, when fueling to catch spills/leaks. Place a stockpile of spill cleanup materials where it will be readily accessible. Use adsorbent materials on small spills rather than hosing down or burying the spill. Remove the adsorbent materials promptly and dispose of properly.
- Carry out all Federal and State requirements regarding above ground storage tanks. (40 CF Sub. J) Avoid mobile fueling of mobile construction equipment around the site; rather, transport the equipment to designated fueling areas. With the exception of tracked equipment such as bulldozers and perhaps forklifts, most vehicles should be able to travel to a designated area with little lost time. Train employees and subcontractors in proper fueling and cleanup procedures.

### LIMITATIONS:

Sending vehicles/equipment off-site should be done in conjunction with Stabilized Construction Entrance.

### MAINTENANCE:

- Keep ample supplies of spill cleanup materials on-site.
- Inspect fueling areas and storage tanks on a regular schedule.

### TARGETED POLLUTANTS

- ☐ Sediment
- ☐ Nutrients
- ☒ Toxic Materials
- ☒ Oil & Grease
- ☐ Floatable Materials
- ☐ Other Waste

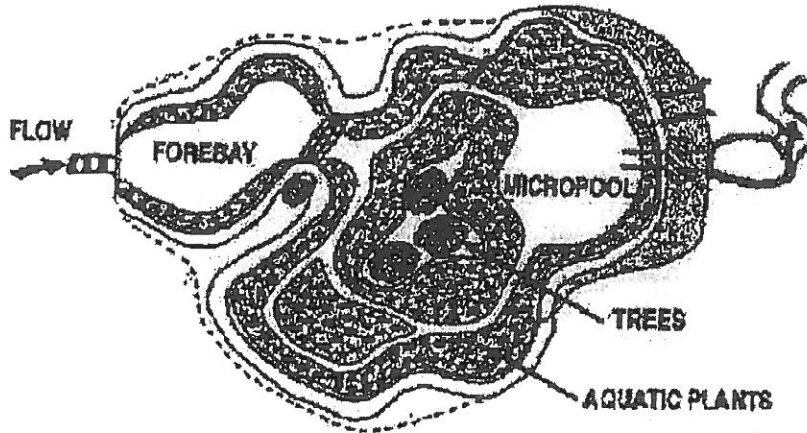
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- ☒ Medium Impact
- ☐ Low or Unknown Impact

### IMPLEMENTATION REQUIREMENTS

- ☒ Capital Costs
- ☐ O&M Costs
- ☒ Maintenance
- ☒ Training

- ☒ High ☒ Medium ☐ Low

## 935 BMP: Constructed Wetlands



### CONSIDERATIONS

- ☒ Soils
- ☒ Area Required
- ☒ Slope
- ☒ Water Availability
- ☒ Aesthetics
- ☐ Hydraulic Head
- ☒ Environmental Side Effects



### DESCRIPTION:

Constructed wetlands have a significant percentage of the facility covered by wetland vegetation.

### APPLICATION:

- Need to achieve high level of particulate and some dissolved contaminant removal.
- Ideal for large, regional tributary areas.
- Multiple benefits of passive recreation and wildlife.

### INSTALLATION/APPLICATION CRITERIA:

- Suitable soils for wetland vegetation are required.
- Surface area equal to at least 1% and preferably 2% of the tributary watershed.
- Involve qualified wetland ecologist to design and install wetland vegetation.
- Establishing wetland vegetation may be difficult.

### LIMITATIONS:

- Concern for mosquitoes.
- Cannot be placed on steep unstable slopes.
- Need base flow to maintain water level.
- Not feasible in densely developed areas.
- Nutrient release may occur during winter.
- Overgrowth can lead to reduced hydraulic capacity.
- Regulatory agencies may limit water quality to constructed wetlands.

### MAINTENANCE:

- Remove foreign debris and sediment build-up.
- Areas of bank erosion should be repaired.
- Remove nuisance species.
- Control mosquitoes.

### TARGETED POLLUTANTS

- Sediment
- Nutrients
- Heavy Metals
- Toxic Materials
- Oxygen Demanding Substances
- Oil & Grease
- Floatable Materials
- ☒ Bacteria & Viruses

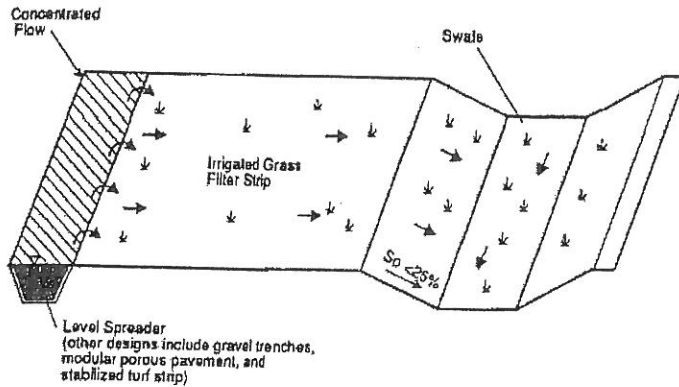
- High Impact
- ☒ Medium Impact
- ☐ Low or Unknown Impact

### IMPLEMENTATION REQUIREMENTS

- Capital Costs
- ☒ O&M Costs
- ☒ Maintenance
- ☐ Training

- High ☒ Medium ☐ Low

## 937 BMP: Grassed Filter Strip



### GENERAL DESCRIPTION:

Filter strips are 20-foot-wide strips of natural or planted vegetation around a construction site. They are designed to cause deposition of sediments within the vegetation layer.

### APPLICATIONS:

- Suited for areas where the soils are well drained or moderately well drained.
- Areas where the bedrock and the water table are well below the surface.

### INSTALLATION/APPLICATION CRITERIA:

- Make sure the vegetative cover is dense enough to protect underlying soil while causing sediment to settle.
- Filter strip must be approximately 20 feet wide to function well.
- The length should be approximately 50 to 75 feet. Where slopes become steeper the length of the strip must be increased.

### LIMITATIONS:

- Only applicable in areas where vegetation is previously established or where sod is added.
- Vegetated filter strips will not function well on steep slopes, in hilly areas, or in highly paved areas.
- Sites with slopes of 15 percent or more may not be suitable for filtering storm water flows.

### MAINTENANCE:

- Check for channels and repair.
- Provide rock aprons to aid in slowing flow if necessary.
- Maintain vegetation at optimal height and thickness.

### OBJECTIVES

- ☐ Housekeeping Practices
- ☐ Contain Waste
- ☐ Minimize Disturbed Areas
- ☒ Stabilize Disturbed Areas
- ☒ Protect Slopes/Channels
- ☒ Control Site Perimeter
- ☐ Control Internal Erosion



### TARGETED POLLUTANTS

- ☒ Sediment
- ☒ Nutrients
- ☐ Toxic Materials
- ☐ Oil & Grease
- ☐ Floatable Materials
- ☐ Other Waste

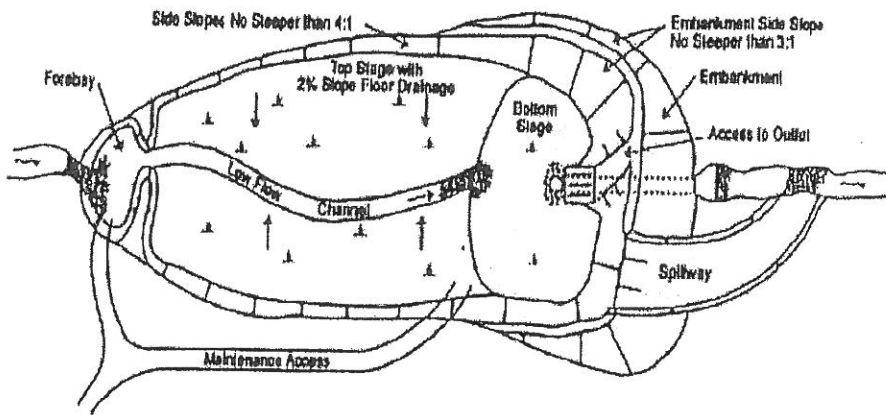
- ☒ High Impact
- ☒ Medium Impact
- ☐ Low or Unknown Impact

### IMPLEMENTATION REQUIREMENTS

- ☒ Capital Costs
- ☒ O&M Costs
- ☒ Maintenance
- ☐ Training

- ☒ High ☒ Medium ☐ Low

## 947 BMP: Extended Detention Basins



### DESCRIPTIONS:

Extended detention basins are dry between storms. During a storm the basin fills. A bottom outlet releases the stormwater slowly to provide time for sediments to settle.

### APPLICATION:

- Objective is to remove only particulate pollutants.
- Use where lack of water prevents the use of wet ponds, wetlands or biofilters.
- Use where wet ponds or wetlands would cause unacceptable mosquito conditions.

### INSTALLATION/APPLICATION CRITERIA:

- Basin volume is sized to capture a particular fraction of the runoff.
- Drawdown time of 24 to 40 hours.
- Shallow basin with large surface area performs better than deep basin with same volume.
- Place energy dissipators at the entrance to minimize bottom erosion and resuspension.
- Vegetate side slopes and bottom to the maximum extent practical.
- If side erosion is particularly severe, consider paving or soil stabilization.
- If floatables are a problem, protect outlet with trash rack or other device.
- Provide bypass or pass through capabilities for 100-year storm.

### LIMITATIONS:

- May be less reliable than other treatment control BMPs. Inability to vegetate banks and bottom may result in erosion and resuspension.
- Limitation of the orifice diameter may preclude use in small watersheds.
- Requires differential elevation between inlet and outlet.

### MAINTENANCE:

- Check outlet regularly for clogging.
- Check banks and bottom of basin for erosion and correct as necessary.
- Remove sediment when accumulation reaches 6-inches, or if resuspension is observed

### CONSIDERATIONS

- ☐ Soils
- ☒ Area Required
- ☐ Slope
- ☐ Water Availability
- ☒ Aesthetics
- ☒ Hydraulic Head
- ☐ Environmental Side Effects



### TARGETED POLLUTANTS

- ☒ Sediment
- ☒ Nutrients
- ☒ Heavy Metals
- ☒ Toxic Materials
- ☒ Oxygen Demanding Substances
- ☒ Oil & Grease
- ☒ Floatable Materials
- ☐ Bacteria & Viruses

- ☒ High Impact
- ☒ Medium Impact
- ☐ Low or Unknown Impact

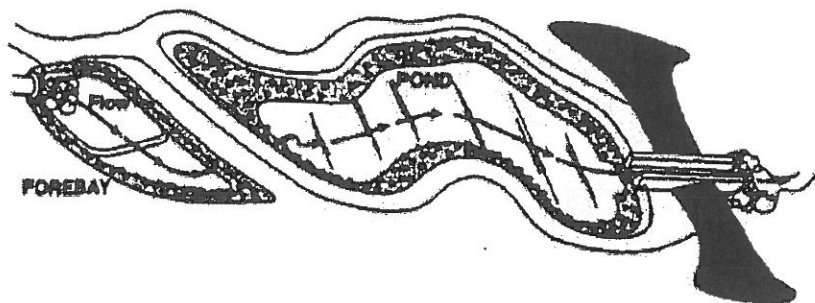
### IMPLEMENTATION REQUIREMENTS

- ☒ Capital Costs
- ☒ O&M Costs
- ☒ Maintenance
- ☐ Training

- ☒ High ☒ Medium ☐ Low



## 948 BMP: Wet Ponds



### CONSIDERATIONS

- ☐ Soils
- ☒ Area Required
- ☒ Slope
- ☒ Water Availability
- ☒ Aesthetics
- ☐ Hydraulic Head
- ☒ Environmental Side Effects



### DESCRIPTION:

A wet pond has a permanent water pool to treat incoming stormwater. An enhanced wet pond includes a pretreatment sediment forebay.

### APPLICATION:

- Need to achieve high level of particulate and some dissolved contaminant removal.
- Ideal for large, regional tributary areas.
- Multiple benefits of passive recreation (e.g. bird watching, wildlife habitat).

### INSTALLATION/APPLICATION CRITERIA:

- Water depth of 3 to 9 feet.
- Wetland vegetation, occupying 25-50% of water surface area.
- Design to minimize short-circuiting.
- Bypass storms greater than two-year storm.
- Be careful when installing wetland vegetation.

### LIMITATIONS:

- Concern for mosquitoes and maintaining oxygen in ponds.
- Cannot be placed on steep unstable slopes.
- Need base flow or supplemental water if water level is to be maintained.
- Infeasible in very dense urban areas.

### MAINTENANCE:

- Remove floatables and sediment build-up.
- Correct erosion spots in banks.
- Control mosquitoes.
- May require permits from various regulatory agencies (e.g. Corps of Engineers).

### TARGETED POLLUTANTS

- Sediment
- ☒ Nutrients
- ☒ Heavy Metals
- ☒ Toxic Materials
- ☒ Oxygen Demanding Substances
- ☒ Oil & Grease
- Floatable Materials
- ☒ Bacteria & Viruses

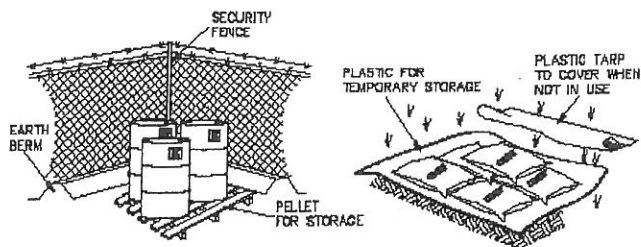
- High Impact
- ☒ Medium Impact
- ☐ Low or Unknown Impact

### IMPLEMENTATION REQUIREMENTS

- Capital Costs
- ☒ O&M Costs
- ☒ Maintenance
- ☐ Training

- High ☒ Medium ☐ Low

## 957 BMP: Materials Storage



- ▶ CONTROLLED STORAGE LOCATION
- ▶ BERMED PERIMETER IMPOUNDMENT
- ▶ STORAGE OFF GROUND
- ▶ COVER WHEN NOT IN USE

### DESCRIPTION:

Controlled storage of on-site materials.

### APPLICATION:

- Storage of hazardous, toxic, and all chemical substances.
- Any construction site with outside storage of materials.

### INSTALLATION/APPLICATION CRITERIA:

- Designate a secured area with limited access as the storage location. Ensure no waterways or drainage paths are nearby.
- Construct compacted earthen berm, or similar perimeter containment around storage location for impoundment in the case of spills.
- Ensure all on-site personnel utilize designated storage area. Do not store excessive amounts of material that will not be utilized on site.
- For active use of materials away from the storage area ensure materials are not set directly on the ground and are covered when not in use. Protect storm drainage during use.

### LIMITATIONS:

- Does not prevent contamination due to mishandling of products.
- Spill Prevention and Response Plan still required.
- Only effective if materials are actively stored in controlled location.

### MAINTENANCE:

- Inspect daily and repair any damage to perimeter impoundment or security fencing.
- Check materials are being correctly stored (i.e. standing upright, in labeled containers, tightly capped) and that no materials are being stored away from the designated location.

### OBJECTIVES

- ☒ Housekeeping Practices
- ☒ Contain Waste
- ☐ Minimize Disturbed Areas
- ☐ Stabilize Disturbed Areas
- ☐ Protect Slopes/Channels
- ☐ Control Site Perimeter
- ☐ Control Internal Erosion



### TARGETED POLLUTANTS

- ☐ Sediment
- ☐ Nutrients
- ☒ Toxic Materials
- ☐ Oil & Grease
- ☐ Floatable Materials
- ☒ Other Waste

- ☒ High Impact
- ☒ Medium Impact
- ☐ Low or Unknown Impact

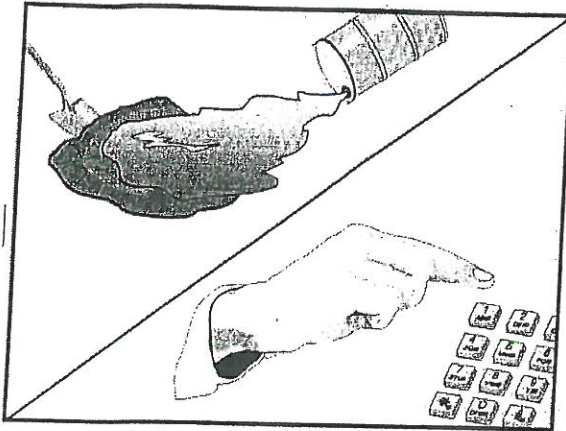
### IMPLEMENTATION REQUIREMENTS

- ☒ Capital Costs
- ☒ O&M Costs
- ☒ Maintenance
- ☒ Training

- ☒ High ☒ Medium ☐ Low



## 959 BMP: Spill Clean-Up



Standard Symbol

### BMP Objectives

- ☐ Soil Stabilization
- ☐ Sediment Control
- ☐ Tracking Control
- ☐ Wind Erosion Control
- ☒ Non-Storm Water Management
- ☒ Materials and Waste Management

### DESCRIPTION:

Practices to clean-up leakage/spillage of on-site materials that may be harmful to receiving waters.

### APPLICATION:

All Sites

### INSTALLATION/APPLICATION CRITERIA:

- Store controlled materials within a storage area
- Educate personnel on prevention and clean-up
- Designate an Emergency Coordinator responsible practices and for providing spill response
- Maintain a supply of clean-up equipment on-site response agencies with phone numbers

### METHODS:

- Clean-up spills/leaks immediately and remediate cause
- Use as little water as possible. NEVER HOSE DOWN OR BURY SPILL CONTAMINATED MATERIAL
- Use rags or absorbent material for clean up. Excavate contaminated soils. Dispose of clean-up material and soil as hazardous waste
- Document all spills with date, location, substance, volume, actions taken and other pertinent data
- Contact local Fire Department and State Division of Environmental Response and Remediation (Phone #536-4100) for any spill of reportable quantity

### OBJECTIVES

- ☒ Housekeeping Practices
- ☒ Contain Waste
- ☐ Minimize Disturbed Areas
- ☐ Stabilize Disturbed Areas
- ☐ Protect Slopes/Channels
- ☐ Control Site Perimeter
- ☐ Control Internal Erosion



### TARGETED POLLUTANTS

- ☐ Sediment
- ☐ Nutrients
- ☒ Toxic Materials
- ☒ Oil & Grease
- ☐ Floatable Materials
- ☐ Other Waste

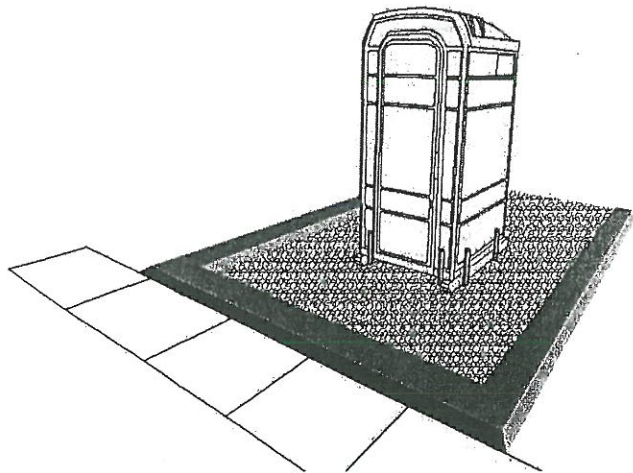
- ☒ High Impact
- ☒ Medium Impact
- ☐ Low or Unknown Impact

### IMPLEMENTATION REQUIREMENTS

- ☒ Capital Costs
- ☐ O&M Costs
- ☐ Maintenance
- ☒ Training

- ☒ High ☒ Medium ☐ Low

## 961 BMP: Portable Toilet



### DESCRIPTION:

Temporary on-site sanitary facilities for construction personnel

### APPLICATION:

All sites with no permanent sanitary facilities or where permanent facility is too far from activities

### INSTALLATION/APPLICATION CRITERIA:

- Locate portable toilets in convenient locations throughout the site
- Prepare level, gravel surface and provide clear access to the toilets for servicing and for on-site personnel
- Construct earth berm perimeter (see Earth Berm Barrier Sheet), control for spill/ leak protection
- Anchor the portable toilet to prevent tipping

### LIMITATIONS:

- No limitations

### MAINTENANCE:

- Portable toilets should be maintained in good working order by licensed service with daily observation for leak detection
- Regular waste collection should be arranged with licensed service
- All waste should be deposited in sanitary sewer system for treatment with appropriate agency approval

### OBJECTIVES

- ☒ Housekeeping Practices
- ☒ Contain Waste
- ☐ Minimize Disturbed Areas
- ☐ Stabilize Disturbed Areas
- ☐ Protect Slopes/Channels
- ☐ Control Site Perimeter
- ☐ Control Internal Erosion



### TARGETED POLLUTANTS

- ☐ Sediment
- ☐ Nutrients
- ☒ Toxic Materials
- ☐ Oil & Grease
- ☐ Floatable Materials
- ☒ Other Waste

- |  |
|--|
| <input checked="" type="checkbox"/> High Impact<br><input checked="" type="checkbox"/> Medium Impact<br><input type="checkbox"/> Low or Unknown Impact |
|--|

### IMPLEMENTATION REQUIREMENTS

- ☒ Capital Costs
- ☒ O&M Costs
- ☒ Maintenance
- ☒ Training

- |  |
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## **Appendix Q**

### **Inventory of All Municipal Facilities and Operations**

#### 4.2.6.1 Inventory of City-owned or operated facilities

1. Farmington City Hall
2. Farmington Swimming Pool
3. Community Arts Building
4. Fire Station
5. Police Station
6. Public Works Building- storage yard, maintenance facility, salt storage facility
7. Parks
  - a. Cemetery Park
  - b. Woodland Park
  - c. South Park
  - d. 1100 W Park
  - e. Sound Wall Park
  - f. Bus Park
  - g. Forbush Park
  - h. Ezra T Clark Park
  - i. Farmington Pond Park
  - j. Park Lane Park
  - k. Quail Cove North
  - l. South Park
  - m. Quail Cove South
  - n. Shepard Lane Park
  - o. Moon Park
  - p. Lupine Park
  - q. Cherry Hill Basin
  - r. Heritage Park
  - s. Farmington Crossing Park
  - t. Hunters Creek Park
  - u. Spring Creek Park
  - v. Farmington Ranches Park
  - w. Chestnut Farms Park
  - x. 1075 Kmart Park
  - y. 600 N Park
  - z. Rec Center
  - aa. 5-way by Post Office
  - bb. Frontage Road and 750 West
8. Detention Basins- See Appendix L
9. Museum
10. Gymnasium
11. Well Houses
  - a. Community Center- 94 S Main
  - b. 600 North wellhouse- Well #1

- c. 600 N 100 E booster
- d. Well #2- behind police station
- e. Well #3- 175 E Glover Lane
- f. C-5- Top of 500 S
- g. C-3 Booster- Spencer Way
- h. N-3 Booster- Grandview

**Appendix R**  
**Assessment of Municipal Facilities and Operations**  
**For Their Potential to Generate Storm Water Pollutants to the Storm Water System**

4.2.6.2 Assessment process to identify potential for discharging pollutants from municipal facilities

1. Contact person in charge of each public facility and ask them to identify any source of pollutants that may be located at their facility.
2. Evaluate the exposure of each source of pollutants to determine the potential for entering the storm drain system.
3. Identify/install BMPs where appropriate to reduce the potential for pollutants from entering the storm drain system.

Police Station- No potential pollutants per Chief Hansen 5-23-16

Fire Station- Vehicle washing, fire suppression chemicals

City Hall- No potential pollutants

Community Arts Center- No potential pollutants

Museum- No potential pollutants

Swimming Pool- Chlorine, Chloric Acid

Public Works Building- Motor oil, gasoline/diesel, antifreeze, fertilizer, various weed killers, Speed Zone weed killer, Quickcrete concrete mix, marking paints, hydraulic oil and transmission fluid.

Parks Department at Public Works- Weed killers (Speed Zone, Makaze), Fertilizer, grass clippings, Roundup.

Gymnasium- No potential pollutants

Well Houses/Booster Stations- sodium hypochlorite, hydrofluosilicic acid, lubricating oil FM32 food grade



## **Appendix S**

### **Standard Operating Procedures for City Operations (See Below)**

# STANDARD OPERATING PROCEDURES

Farmington City, Utah



Adapted from Davis County Storm Water Coalition SOPs- November, 2012

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## **PARKS – Chemical Application Pesticides, Herbicides, Fertilizers**

1. Preparation:
  - a. Calibrate fertilizer and pesticide application equipment to avoid excessive application.
  - b. Use pesticides only if there is an actual pest problem and test soils for determining proper fertilizer use when determined necessary by staff.
  - c. Time and apply the application of fertilizers, herbicides or pesticides to coincide with the manufacturer's recommendation for best results ("Read the Label").
  - d. Know the weather conditions. Do not use pesticides if rain is expected. Apply pesticides only when wind speeds are low (less than 5 mph).
2. Process:
  - a. Always follow the manufacturer's recommendations for mixing, application and disposal. ("Read the Label").
  - b. Do not mix or prepare pesticides for application near storm drains, preferably mix inside a protected area with impervious secondary containment (preferably indoors) so that spills or leaks will not contact soils.
  - c. Employ techniques to minimize off-target application (e.g. spray drift, over broadcasting.) of pesticides and fertilizers.
3. Clean-up:
  - a. Sweep/blow pavements or sidewalks where fertilizers or other solid chemicals have fallen, back onto grassy areas before applying irrigation water.
  - b. Triple rinse containers, and use rinse water as product. Dispose of unused pesticide as hazardous waste.
  - c. Always follow all federal and state regulations governing use, storage and disposal of fertilizers, herbicides or pesticides and their containers. ("Read the Label").
4. Documentation:
  - a. Keep copies of MSD sheets for all pesticides, fertilizers and other hazardous products used.
  - b. Record fertilizing and pesticide application activities.



## **PARKS – Mowing and Trimming**

1. Preparation:
  - a. Review process with all employees.
2. Process:
  - a. Avoid allowing clippings to enter storm drain inlets.
  - b. Clippings to be swept or blown back on to grass areas.
3. Clean-up:
  - a. Mowers are scraped and brushed at shop – dry spoils are dried, swept and disposed of.
  - b. Equipment washed in approved wash station.



## **PARKS – Planting Vegetation (Starters):**

1. Preparation
  - a. Call the Blue Stakes Center of Utah at least 2 working days before any digging will be done, to reveal the location of any underground utilities.
  - b. Dial 811 or 1-800-662-4111.
  - c. Decide where any spoils will be taken.
2. Process:
  - a. Dig holes; place spoils near the hole where they may easily be placed back around roots. Avoid placing spoils in the gutter.
  - b. Bring each plant near the edge of the hole dug for it.
  - c. Check the depth of the hole, and adjust the depth if necessary. The depth of the hole for a tree should be determined by park staff depending on soil conditions, groundwater depths, etc.
  - d. Carefully remove pot or burlap.
  - e. Place the plant in the hole.
  - f. Backfill the hole with existing spoils, compost, and a litter fertilizer if desired. Do not use excessive amendments.
  - g. Water the plant.
  - h. Stake the plant, if necessary, to stabilize it.
3. Clean-up:
  - a. Move any extra spoils into truck or trailer. Place the spoils on a tarp if there is likelihood that some of the dirt would be lost through openings in the bed.
  - b. Sweep dirt from surrounding pavement(s) into the planter area.
  - c. Transport spoils to their designated fill or disposal area.





## **PARKS – Planting Vegetation (Seeds)**

1. Preparation:
  - a. Call the Blue Stakes Center of Utah at least 2 working days before any digging will be done, to reveal the location of any underground utilities.
  - b. Dial 811 or 1-800-662-4111.
  - c. Decide on the application rate, method, water source, and ensure adequate materials are in possession.
  - d. Grade and prepare the soil to receive the seed. Place any extra soil in a convenient location to collect.
2. Process:
  - a. Place the seed and any cover using the pre-determined application method (and rate).
  - b. Lightly moisten the seed.
3. Clean-up:
  - a. Move any extra spoils into truck or trailer. Place the spoils on a tarp if there is likelihood that some of the dirt would be lost through openings in the bed.
  - b. Sweep dirt, seed, and any cover material from surrounding pavement(s) into the planter area.
  - c. Transport spoils to their designated fill or disposal area.



## STREETS/STORM DRAIN – Catch Basins

1. Preparation:
  - a. Clean sediment and trash off grate.
  - b. Do visual inspection on outside of grate.
  - c. Make sure nothing needs to be replaced.
  - d. Do inside visual inspection to see what needs to be cleaned.
  
2. Process:
  - a. Clean using a high powered vac truck to start sucking out sediment. When sediment is gone use a high pressure washer to clean any other sediment out of catch basin.
  - b. After catch basin is clean, send the rotor of the vac truck downstream to clean pipe and pull back sediment that might have gotten down stream of pipe.
  - c. Move truck downstream of pipe to next catch basin.
  
3. Clean-up:
  - a. When vac truck is full of sediment take it to Central Davis Sewer District to dump all the sediment out of truck into a dry pond.
  - b. When it dries, clean it up with a backhoe, put it into a dump truck, and take it to the landfill.
  
4. Documentation:
  - a. Keep logs of number of catch basins cleaned.
  - b. Record the amount of waste collected.
  - c. Keep any notes or comments on any problems.



## STREETS/STORM DRAIN – Curb Painting

1. Preparation:
  - a. Calculate the amount of paint required for the job.
  - b. Use water based paints if possible.
  - c. Determine whether the wastes will be hazardous or not and the required proper disposal of said wastes.
  - d. Determine locations of storm drain inlets and sewer inlets that may need to be protected.
  - e. Prepare surfaces to be painted without generating wastewater; e.g. Use sandblasting and or scraping.
  - f. Use a citrus-based paint remover whenever possible, less toxic than chemical strippers.
  - g. If wastewater will be generated, use curb, dyke, etc. around the activity to collect the water and collect the debris. Dispose of contaminants collected properly.
2. Process:
  - a. Paint curb.
  - b. Prevent over-spraying of paints and/or excessive sandblasting.
  - c. Use drip pans and drop clothes in areas of mixing paints and painting.
  - d. Store latex paint rollers and brushes in air tight bags to be reused later with the same color.
  - e. Have available absorbent material and other BMP's ready for an accidental paint spill.
3. Clean-up:
  - a. Paint out brushes and rollers as much as possible. Squeeze excess paint from brushes and rollers back into the containers prior to cleaning them.
  - b. Pour excess paint from trays and buckets back into the paint can containers and wipes with cloth or paper towels. Dispose of the towels according to the recommendations on the paint being used.
  - c. Rinse water-based paint brushes in the sink after pre-cleaning. Never pour excess paint or wastewater from cleanup of paint in the storm drain.
  - d. Clean up oil based paints with paint thinner. Never clean oil based brushes in a sink or over a storm drain. Filter solvents for reuse if possible and/or store in approved drum for recycling.
4. Documentation:
  - a. Write-up/report any discharges into storm drain system.



## STREETS/STORM DRAIN – Detention Ponds

1. Preparation:
  - a. Remove any sediment and trash off grates.
  - b. Do a visual inspection to make sure grates are in good shape and everything is in good working order.
  - c. Pull grates, inspect inside of basin.
2. Process:
  - a. Start cleaning by using backhoe to remove silt and sediment off the bottom and try to keep anything from going downstream.
  - b. Put all sediment into a dump truck.
3. Clean-up:
  - a. After cleaning basins, clean off the concrete pads.
  - b. Make sure they are swept up and clean.
  - c. Haul to and dump trucks in the landfill.
4. Documentation:
  - a. Keep logs of number of detention ponds cleaned.
  - b. Record the amount of waste collected.
  - c. Keep any notes or comments on any problems.



## STREETS/STORM DRAIN – Creek Management

1. Preparation:
  - a. Monitor streams on a regular basis.
  - b. Check culverts and crossings after every storm.
  - c. Maintain access to stream channels wherever possible.
2. Process:
  - a. Identify areas requiring maintenance.
  - b. Determine what manpower or equipment will be required.
  - c. Identify access and easements to area requiring maintenance.
  - d. Determine method of maintenance that will be least damaging to the channel.
3. Clean-up:
  - a. Stabilize all disturbed soils.
  - b. Remove all tracking from paved surfaces near maintenance site, if applicable.
  - c. Haul all debris or sediment removed from area to approved dumping site.
4. Documentation:
  - a. Keep log of actions performed.
  - b. Record the amount of materials removed or imported.
  - c. Keep any notes or comments on any problems.



## STREETS/STORM DRAIN – Chip Seal

1. Preparation:
  - a. Clean and dry areas where materials are to be applied. Cover manholes and catch basins to prevent oil and materials from getting inside the structures or system.
2. Process:
  - a. Follow closely behind emulsion distributor with chip spreader. Travels slowly enough to prevent chips from rolling when they hit the surface. Use street sweeper to pick up excess chips. Follow closely behind the chip spreader with rollers. Maximum speed 5 mph. Roll entire surface twice.
3. Clean-up:
  - a. Remove loose aggregate from the roadway. Remove excessive asphalt applications and spills. When covers are removed, remove any materials which have entered the storm drain structures.
4. Documentation:
  - a. Record location and date on the maintenance database and map.





## STREETS/STORM DRAIN – Slurry Seal

1. Preparation:
  - a. Remove weeds from the roads. Clean and dry areas where materials are to be applied. Verify that existing pavement has been inspected for detrimental effects of poor drainage.
2. Process:
  - a. Apply materials smoothly and uniformly. Slurry material should not run onto adjacent pavement surface.
3. Clean-up:
  - a. Ensure that all loose is removed from travelway. Ensure that excess emulsion and spill materials are removed from the site and disposed of properly.
4. Documentation:
  - a. Record location and date on the maintenance database and map



## STREETS/STORM DRAIN – Overlays and Patching

1. Preparation:
  - a. Cover manholes and catch basins to prevent oil and materials from getting inside the structures or system.
  - b. Properly seal cracks. Remove alligator cracks and potholes and patch them. Mill rutting.
  - c. Clean and dry surface.
  - d. Apply uniform tack coat and cure prior to placement of overlay.
2. Process:
  - a. Check aggregate for proper temperature, percentage asphalt, gradation, air voids and any other agency requirements.
  - b. Surface texture should be uniform, no tearing or scuffing.
  - c. Roll to achieve proper in-place air void specification.
3. Clean-up:
  - a. Remove covering as soon as the threat of imported materials entering the system is reduced and prior to a storm event. Raise structure rims to elevation of new asphalt.
4. Documentation:
  - a. Record location and date on the maintenance database and map



## STREETS/STORM DRAIN – Crack Seal

1. Preparation:
  - a. Remove weeds from the road.
  - b. Air-blast cracks to remove sediments from the crack to allow for proper adhesion.
  - c. Surface should be clean and dry.
2. Process:
  - a. Maintain proper temperature of material.
  - b. Apply sufficient material to form the specified configuration.
3. Clean-up:
  - a. Remove excessive sealant application or spills.
  - b. Remove all loose debris from cleaning from the pavement.
4. Documentation:
  - a. Record location and date on the maintenance database and map



## STREETS/STORM DRAIN – Shouldering and Mowing

1. Preparation:
  - a. Use traffic control devices as necessary.
  - b. Perform any roadside maintenance in a way to prevent eroded materials from entering the storm drain system.
2. Process:
  - a. Place import material as needed and perform grading to achieve proper drainage.
  - b. Remove grass clippings from paved surface and gutter after mowing.
3. Clean-up:
  - a. Clean any loose material off asphalt or gutter.
4. Documentation:
  - a. Record location and date on the maintenance database and map



## STREETS/STORM DRAIN – Secondary Road Maintenance

1. Preparation:
  - a. Determine length of job or task.
  - b. Locate and determine a disposal site.
  - c. Use proper equipment and avoid any safety hazards.
  - d. Check for proper drainage: slopes, berms etc.
  - e. Protect storm drain inlets with gravel bags.
2. Process:
  - a. Load truck with material or have it brought in.
  - b. Verify load, travel same route. Smooth or grade road.
  - c. Maintain proper slope in road for water run off.
3. Clean-up:
  - a. Clean up accumulated material around gravel bags, then remove.
  - b. Clean up equipment. Spray down should not enter storm drain system.
  - c. Clean up any debris on traveled roads.
4. Documentation:
  - a. Daily activity report; Log book; or journal. Date, time, who, location.



## STREETS/STORM DRAIN – Concrete Work

1. Preparation:
  - a. Train employees and contractors in proper concrete waste management.
  - b. Store dry and wet materials under cover, away from drainage areas.
  - c. Prepare or designate cleanout area, or direct contractor to clean out at their shop.
2. Process:
  - a. Avoid mixing excess amounts of fresh concrete on-site
  - b. Repair gutters, sidewalks, grind trip hazards, remove and replace concrete sections as necessary
3. Clean-up:
  - a. Perform washout of concrete trucks in designated areas only
  - b. Do not washout concrete trucks into storm drains, open ditches, streets or streams
  - c. Cement and concrete dust from grinding activities is swept up and removed from the site.
4. Documentation:





## STREETS/STORM DRAIN – Garbage Storage

1. Preparation:
  - a. Locate dumpsters and trash cans with lids in convenient, easily observable areas.
  - b. Provide properly-labeled recycling bins to reduce the amount of garbage disposed.
  - c. Provide training to employees to prevent improper disposal of general trash.
2. Process:
  - a. Inspect garbage bins for leaks regularly, and have repairs made immediately by responsible party.
  - b. Locate dumpsters on a flat, concrete surface that does not slope or drain directly into the storm drain system.
  - c. Install berms, curbing or vegetation strips around storage areas to control water entering/leaving storage areas.
3. Clean-up:
  - a. Keep areas around dumpsters clean of all garbage.
  - b. Have garbage bins emptied as often as needed to keep from overflowing.
  - c. Wash out bins or dumpsters as needed. Do not allow washout to enter storm drains.



## STREETS/STORM DRAIN – Snow Removal and De-icing

1. Preparation:
  - a. Store de-icing material under a covered storage area.
  - b. Slope loading area away from parking lot.
  - c. Design drainage from loading area to collect runoff before entering storm water system.
  - d. Wash out vehicles (if necessary) in approved washout area before preparing them for snow removal.
  - e. Calibrate spreaders to minimize amount of de-icing material used and still be effective.
  - f. Provide vehicles with spill cleanup kits in case of hydraulic line rupture or other spills.
  - g. Train employees in spill cleanup procedures and proper handling and storage of de-icing materials.
2. Process:
  - a. Load material into trucks minimizing spillage.
  - b. Distribute the minimum amount of de-icing material to be effective on roads.
  - c. Park trucks with de-icing material inside when possible.
3. Cleanup:
  - a. Sweep up all spilled de-icing material around loading area.
  - b. Clean out trucks after snow removal duty in approved washout area.
  - c. Provide maintenance for vehicles in covered area.
  - d. Sweep up residual sand from streets when weather permits.



## STREETS/STORM DRAIN – Street Sweeping

1. Preparation:
  - a. Prioritize cleaning routes to use at the highest frequency in areas with the highest pollutant loading.
  - b. Restrict street parking prior to and during sweeping using regulations as necessary.
  - c. Increase sweeping frequency just before the rainy season.
  - d. Perform preventative maintenance and services on sweepers to increase and maintain their efficiency.
2. Process:
  - a. Streets are to be swept as needed or specified by the city. Street maps are used to ensure all streets are swept at a specified interval.
  - b. Drive street sweeper safely and pick up debris.
3. Clean-up:
  - a. Street sweepers will be cleaned out at the Central Davis Sewer District site.
  - b. After drying, waste from the sweeper will be collected and hauled to the landfill.
4. Documentation:
  - a. Keep accurate logs to track street swept and streets still requiring sweeping.



## STREETS/STORM DRAIN – Transporting Soil and Gravel

1. Preparation:
  - a. Dry out wet materials before transporting.
  - b. Spray down dusty materials to keep from blowing.
  - c. Make sure you know and understand the SWPPP requirements for the site you will be working at.
2. Process:
  - a. Use a stabilized construction entrance to access or leave the site where materials are being transported to/from.
  - b. Cover truck bed with a secured tarp before transporting.
  - c. Follow the SWPPP requirements for the specific site to/from which the materials are being hauled.
  - d. Make sure not to overfill materials when loading trucks.
3. Clean up:
  - a. Use sweeper to clean up any materials tracked out on the roads from site.
  - b. Wash out truck and other equipment making sure wash water cannot enter the storm drains.
4. Documentation:
  - a. Report any contamination from hauling on a regular inspection report.



## **WATER – Planned Waterline Excavation Repair/Replacement**

1. Preparation:
  - a. Determine where discharge flow will go.
  - b. Protect storm drain inlets.
  - c. Clean gutters leading to inlets.
  
2. Process:
  - a. Direct any discharge to pre-determined area.
  - b. Backfill excavation.
  - c. Haul off excavated material or stock pile nearby.
  
3. Clean up:
  - a. Clear gutter/ waterway where water flowed.
  - b. Clean up all areas around excavation.
  - c. Clean up all tracked material from travel path.

## **WATER – Unplanned Waterline Excavation Repair/Replacement**

1. Preparation:
  - a. Equip leak repair equipment with filter material (Inlet Protection Filter bags).
  
2. Process:
  - a. Stop the discharge.
  - b. Inspect flow path of discharged water.
  - c. Protect water inlet areas.
  - d. Follow planned repair procedures.
  - e. Haul off spoils of excavation.
  - f. Consider use of silt filter bags on pumps.
  
3. Clean-up:
  - a. Repair eroded areas as needed.
  - b. Follow planned repair procedures.
  - c. Clean up all tracked material from travel path.





## **WATER – Transporting Dry Excavated Materials & Spoils**

1. Preparation:
  - a. Utilize truck with proper containment of materials.
  - b. Determine disposal site of excavated materials.
2. Process:
  - a. Load.
  - b. Check truck after loading for possible spillage.
  - c. Transport in manner to eliminate spillage & tracking.
  - d. Utilize one route for transporting.
3. Clean-up:
  - a. Clean loading area.
  - b. Clean transporting route.
  - c. Wash off truck and other equipment making sure wash water does not enter the storm drain.

## **WATER – Transporting Wet Excavated Materials & Spoils**

1. Preparation:
  - a. Utilize truck with containment for material.
  - b. Determine disposal site of excavated material.
2. Process:
  - a. Load and Transport in manner to eliminate spillage & tracking of material.
  - b. Check truck for spillage.
  - c. Utilize one route of transport.
3. Clean-up:
  - a. Check route of transport and provide cleaning of any spilled material.
  - b. Wash out truck and other equipment.

## **WATER – Waterline Flushing for Routine Maintenance**

1. Preparation:
  - a. Determine flow path of discharge to inlet of waterway.
  - b. Determine chlorine residual.
2. Process:
  - a. Clean flow path.
  - b. Protect inlet structures.
  - c. Use diffuser to dissipate pressure to reduce erosion possibilities.
3. Clean-up:
  - a. Clean flow path.
  - b. Remove inlet protection.
4. Documentation:
  - a. Record residual tests of discharge water.



## **WATER – Waterline Flushing after Construction/System Disinfection with Discharge to Storm Drain**

1. Preparation:
  - a. Determine chlorine content of discharged water. Utilize de-chlorination equipment.
  - b. Determine flow path of discharge.
2. Process:
  - a. Protect inlets in flow path.
  - b. Sweep and clean flow path.
  - c. Use diffuser to reduce velocities.
3. Clean-up:
  - a. Pick up inlet protection.
  - b. Clean flow paths.
  - c. Remove equipment from flush point.
4. Documentation:
  - a. Record residual test of discharged water.



**WATER – Waterline Flushing after Construction/System Disinfection with Discharge with Haul Off (Used for Dust Control/Compaction)**

1. Preparation:
  - a. Determine chlorine content of discharged water.
  - b. Determine appropriate construction activity for treatment.
2. Process:
  - a. Flush to tanker for disposal on unpaved construction activity for dust control or compaction.
  - b. Confirm that application of water is in appropriate location.
3. Clean-up:
  - a. Remove equipment from flush point.
4. Documentation:
  - a. Record residual test of discharged water.
  - b. Record location of water discharged.

## **WATER – Chemical Handling/Transporting and Spill Response**

1. Preparation:
  - a. Understand MSDS sheets for handling of product.
  - b. Determine proper place of handling.
  - c. Have necessary containment and spill kits at handling place.
  
2. Process:
  - a. Begin transfer process.
  - b. Discontinue operations if spill levels occur.
  - c. Disconnect and store handling equipment.
  
3. Clean-up:
  - a. Clean up spills with proper material.
  - b. Dispose of contaminated material at appropriate facility.
  
4. Documentation:
  - a. Report spills to Davis County.

During work hours:	451-3296	
After hours:	451-4151	Davis County dispatch





## **SPILL INCIDENT- Response and reporting**

When spill is observed or report of spill comes in:

- Does the incident pose an immediate threat to life or health?
  - Yes- Call 911 (give description of location, material, amount, and extent).
    - Describe incident in spill log.
  - No- Move to next step.
- Are you able to safely contain the spill with tools and/or material at hand?
  - Yes- Contain the spill and secure the area, then ensure cleanup is done.
    - Report spill according to the reporting list below.
    - Describe incident in spill log.
- Is spill during working hours?
  - No- Call 911 (give description of location, material, amount, and extent).
    - Describe incident in spill log.
    - On next working day, report according to reporting list below.
  - Yes- Report according to reporting list below.
    - Describe incident in spill log.

## **Incidents to be reported to:**

### **Pollutant Description**

Pollutant releases to water (surface or ground water)  
Hydrocarbons (fuel, oil), release of 25 gallons or more  
Radiological Materials, any spill or release  
Extremely Hazardous chemicals, 2.2 lb. or more  
(e.g. cyanide, arsenic, chlorine)  
Other hazardous chemicals, 220 lb. or more  
Underground storage tanks, any leaking or release

### **Report to**

Davis Co., UDEQ, NRC  
Davis County and UDEQ  
Davis County and UDEQ  
  
Davis County and UDEQ  
Davis County and UDEQ  
UDEQ

*Other spills, particularly those contained and cleaned up, do not need to be reported*

## **Phone contact list**

Emergency	911
Davis County Environmental Health (Davis Co.)	801-451-3296
National Response Center (NRC)	800-536-4123 (24 hours)
Utah Dept. of Environmental Quality (UDEQ)	801-536-4123 (24 hours)
Utah Division of Solid and Hazardous Waste	801-538-6170
Utah Hazmat Response Officer	801-538-3745 (24 hours)



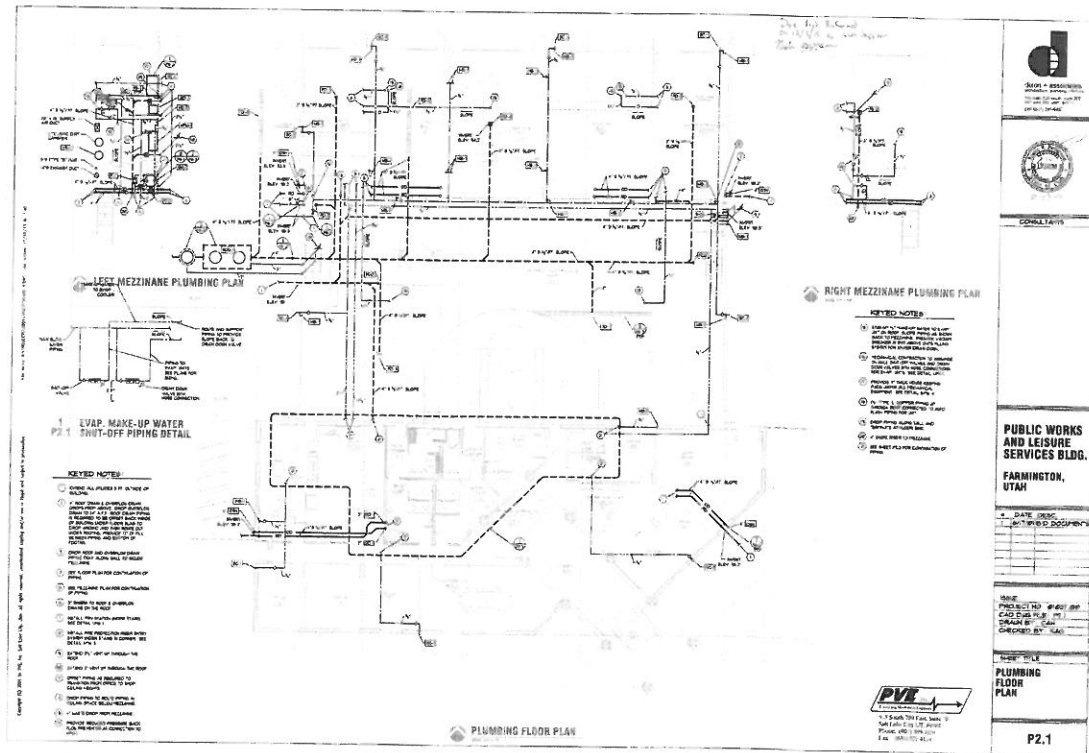
## BUILDINGS – Dumpsters/Garbage Storage

1. Preparation.
  - a. Train employees on proper trash disposal.
  - b. Locate dumpsters and trash cans in convenient, easily observable areas.
  - c. Provide properly-labeled recycling bins to reduce the amount of garbage disposed.
  - d. Install berms, curbing, or vegetation strips around storage areas to control water entering/leaving storage areas.
  - e. Whenever possible store garbage containers beneath a covered structure or inside to prevent contact with storm water.
2. Process.
  - a. Inspect garbage bins for leaks regularly, and have repairs made immediately by responsible party.
  - b. Request/use dumpsters, and trash cans with lids and without drain holes.
  - c. Locate dumpsters on a flat, hard surface that does not slope or drain directly into the storm drain system.
3. Clean-up.
  - a. Keep areas around dumpsters clean of all garbage.
  - b. Have garbage bins emptied regularly to keep from overfilling.
  - c. Wash out bins or dumpsters as needed to keep odors from becoming a problem.
4. Documentation
  - a. Document training of employees



## Appendix T

### Inventory of All Floor Drains Inside All City-owned or Operated Buildings



**Public Works Facility Floor Drain Plan**  
(original large format version available at Public Works)

## **Appendix U**

### **Process to Assess the Water Quality Impacts in the Design of All New Flood Management Structural Controls That are Associated With the City or Discharge to the MS4**

4.2.6.8 Process to assess the water quality impacts on the design of new flood management structural controls.

1. Plans for new flood management structural controls will be submitted to the City for review.
2. The plans will be required to include impacts to water quality that will be created by the structural control.
3. Any negative impact, the design will be required to provide BMPs to mitigate the negative impact.

## **Appendix V**

### **Process to Assess Whether Changes or Additions Should be Made to Structural Controls to Improve Water Quality**

4.2.6.8.1 Process to assess water quality impacts of existing flood management control structures.

1. Develop and inventory of existing flood control management structures.
2. Determine potential sources of water quality impacts associated with the structure.
3. Identify BMPs that could be used to mitigate any potential impacts identified.
4. Identify the most critical needs for mitigation.
5. Develop a schedule for installing BMPs to address the most immediate concerns followed by less immediate concerns.

## **Appendix W**

### **SWMP Documentation Process**

1. Implementation of the Farmington City Storm Water Management Plan (SWMP) will be under the oversight of the Storm Water Official (SWO).
2. The SWO will be responsible for enforcing the requirements of the City's storm water ordinance and the MS4 permit requirements.
3. All SWPPPs will be reviewed by the SWO and will be kept in the SWO office or in storage facilities at the Farmington City Hall.
4. Inspection reports will be kept in files in the Storm Water Inspector's (SWI) office. These files may either be hard copy or electronic files.
5. Enforcement action documentation will be kept by the SWI. Actions on individual homes will be kept in the building permit files, and may be kept in electronic files as well. Violations for subdivision developments will be kept in the subdivision files, and may be kept in electronic files as well. Documentation of other types of violations will be kept in an electronic file.
6. The tracking of SWMP implementation will be done at the annual review of the SWMP as part of the UPDES reporting process.
7. Documentation for parts of the SWMP that are shared responsibilities of the Davis County Storm Water Coalition will be conducted as shown below:

#### **Public Education and Outreach**

The responsibilities for public education and outreach will be shared with the Davis County Storm Water Coalition. Please see Table 1 for the documentation process for this minimum control measure.

#### **Public Involvement and Participation**

1. The Davis County Storm Water Coalition will hold meetings that are open to the public for input and participation. The minutes of the meetings will be kept in record with the Chairman of the Coalition, and will be made available to the City upon request. Minutes may also be kept electronically on the Storm Water Official's computer.
2. A public hearing will be scheduled whenever the SWMP is to be adopted or amended. The public will have the opportunity to have input during this hearing. The hearing will be noticed on the Farmington City website, the Utah Public Notice website and on the City Council Agenda. The minutes of the hearing will be kept on record at Farmington City Hall.
3. The SWMP will be posted on the Farmington City web site. There will be a link provided for comments and public input on the SWMP through this site. A file containing comments received through the web site or by other means will be kept by the SWO.



### **Illicit Connection and Illicit Discharge Detection and Elimination**

1. The records for illicit discharge inspections will be kept in the office of the SWI.
2. Records of calls to the illicit discharge hotline are kept by Davis County Public Health, and are provided to the City on a regular basis. Records of calls to the City will be kept with the SWO and the SWI.
3. A GIS data base may be set up to link individual discharge points in the City's MS4 with inspection reports as they are created.
4. The current storm drain system map will be kept in the GIS data base at Farmington Public Works office.
5. Copies of material distributed to the public will be available in the SWO office at City Hall.

### **Construction Site Runoff Control**

1. A copy of all SWPPP reviews for new developments/redevelopment and residential construction will be kept in the SWO office at City Hall.
2. Copies of the SWMP, annual reports, the storm water ordinance and other relevant documents as required will be kept at the office of the SWO in Farmington City Hall.
3. Records of all inspections, notices of violation and other actions will be kept in the office of the SWI at Farmington Public Works office.

### **Post-Construction Storm Water Management in Development and Redevelopment**

1. Plan reviews of proposed developments will be kept on file in the Farmington City Planning Department. This will include any inquiries for information concerning post-construction BMPs including green infrastructure and low impact development considerations.
2. The inventory of the post-construction structural storm water control measures will be kept at City Hall in the office of the SWO.
3. The inspection schedule for long-term storm water management facilities will be kept in the office of the SWI.
4. Documentation of training for staff will be kept in the office of the SWO, including attendance lists, training agendas and dates.
5. The plan to retrofit existing developed sites that are adversely impacting water quality will be kept at the SWO office.

### **Pollution Prevention and Good Housekeeping for Municipal Operations**

1. The inventory of city-owned facilities will be kept in the office of the SWO.
2. The assessment of the inventory of municipal facilities and operations will be kept in the SWO office.
3. SOPs will be kept at the municipal facilities and in the SWO office.
4. Records of training including attendance, agenda and dates will be kept in the SWO office.

5. The inventory of floor drains will be kept in the SWO office and at the public works offices.
6. The map of all storm drains located on the property of City owned or operated buildings will be kept in the Public Works offices.
7. Records of inspections of municipal facilities will be kept at the Public Works offices.
8. UPDES permits will be kept in the SWO office.
9. The process to assess water quality impacts in the design of all new flood management structural controls that discharge to the City storm water system will be kept at the SWO office.
10. The assessment of the existing flood management structural controls to determine whether changes or additions should be made to improve water quality will be kept at the SWO office.

#### 4.1.2 Documentation Process for Gathering, Maintaining and Using Information

1. All inspection information will be maintained by the Farmington City Storm Water Inspector. Each year it will be evaluated to determine specific areas where improvement is required and whether changes to the SWMP are required.
2. Information concerning training of contractors, the public, employees, etc. will be maintained in the Storm Water Administrator's office.
3. The City will work with the Davis County Storm Water Coalition to find ways to evaluate the effectiveness of the programs being implemented locally and by the Coalition.

## **Appendix X**

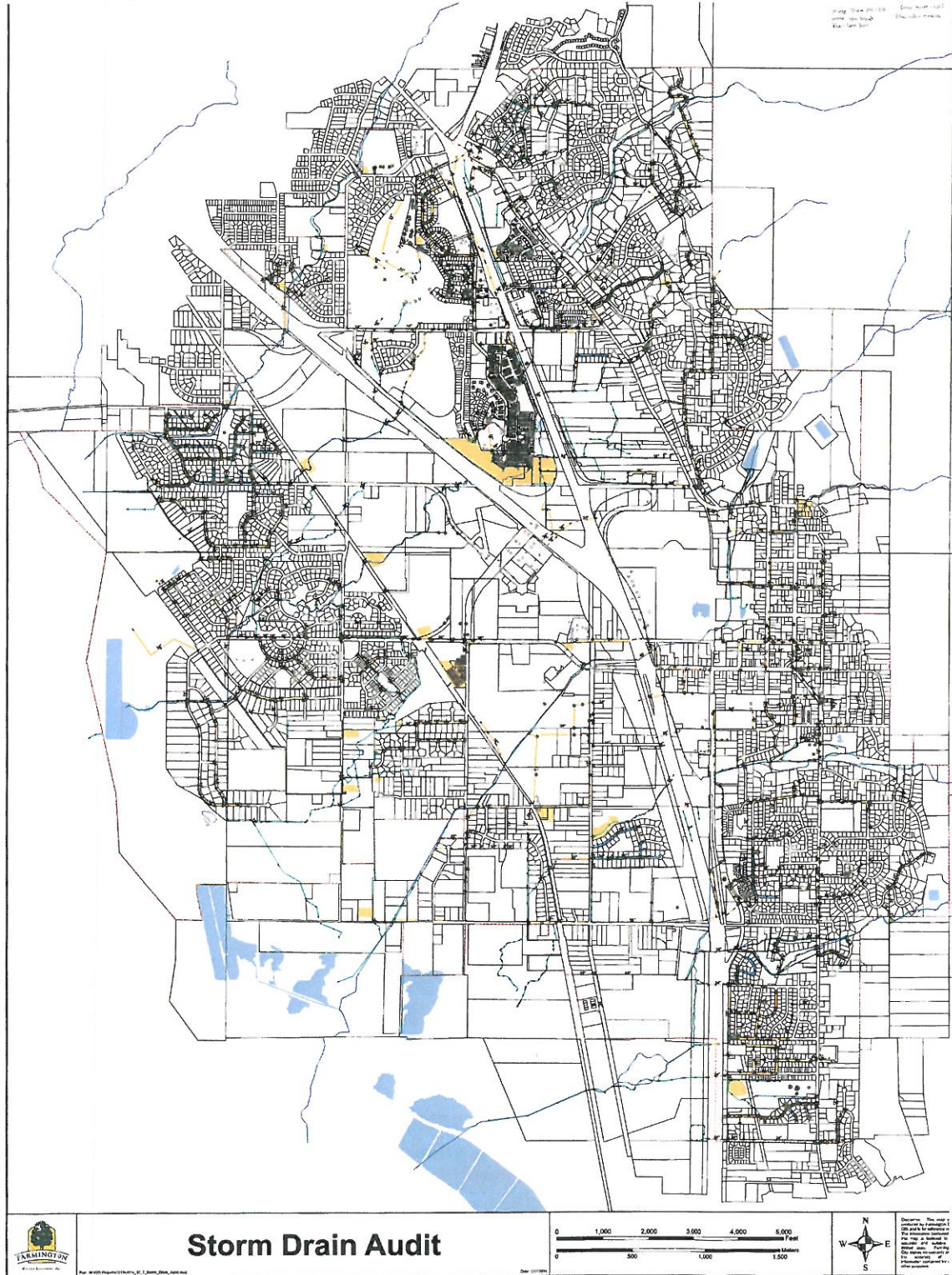
### **Fiscal Assessment**

#### 4.1.2.2 Summary of Fiscal Analysis

The resources necessary to implement the SWMP are provided through the collection of a Storm Water Utility Fee. Funds are allocated as necessary to cover fees associated with participation in the Davis County Storm Water Coalition, salaries of the Storm Water Official and Storm Water Inspector, street sweeper operation and maintenance, etc.

## Appendix Y

### Storm Water Discharge Point Map



Large format version available at Public Works building